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Greenway Implementation in Metropolitan Regions: A Comparative Case Study of North American Examples

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A report to The National Park Service Rivers, Trails and Conservation Assistance Program and Rails-to-Trails Conservancy of Michigan for use in implementing The Southeast Michigan Greenways Project.

Authors

Donna L. Erickson
Associate Professor
School of Natural Resources and Environment
The University of Michigan
430 E. University Avenue
Ann Arbor, Michigan 48109-1115

Tel. 313-763-4457
Fax 313-936-2195
e-mail dle@umich.edu

Anneke F. Louisse
Graduate Student (1994-1996)
College of Architecture and Urban Planning
The University of Michigan
2000 Bonisteel Blvd.
Ann Arbor, Michigan 48109-2069

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Project Collaborators

Barbara Nelson-Jameson
Outdoor Recreation Planner
National Park Service
Rivers, Trails & Conservation Assistance Program
15610 Vaughn Rd.
Brecksville, OH 44141

Rails-to-Trails Conservancy
Michigan Chapter
913 W. Holmes, Suite 145
Lansing , MI 48910

Larry Deck
Project Director
Southeast Michigan Greenways Project
3050 Lorraine St.
Ann Arbor, MI 48108

Norm Cox
President
The Greenway Collaborative, Inc
150 South Fifth Avenue
Ann Arbor, MI 48104-1911

Cover Photo: Larry Deck

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Purposes of Report

This report presents findings from research on strategies for implementing greenway systems. It compares greenway implementation in seven North American metropolitan regions. The purpose of this research is to provide information to assist the Southeast Michigan Greenways project in developing proposals for coordinating the implementation of an interconnected greenway system in the seven-county Detroit metropolitan region. The findings should also be useful as other cities work to implement greenway plans. This research fills a gap about the process for implementing greenway systems.

Executive Summary

Selection of Study Sites

A set of criteria was developed for selecting North American greenway study sites. These include, among others, multi-jurisdictional scope, multiple project objectives, complexity of corridor networks. We chose six metropolitan regions and one state:

- CHATTANOOGA, TENNESSEE
- CHICAGO, ILLINOIS
- INDIANAPOLIS, INDIANA
- MINNEAPOLIS, MINNESOTA
- PORTLAND, OREGON
- TORONTO, ONTARIO CANADA
- STATE OF MARYLAND

Research Methods

Using written material on the greenway networks, we compared basic characteristics such as size, boundaries, project histories, and primary natural features. We also compared the original objectives, which included recreation, conservation, neighborhood enhancement, protection of natural features, environmental education, non-motorized transportation, and water-quality protection.

We then conducted in-depth telephone interviews with key informants at each site. We selected people to interview by using local planning documents and referrals from people knowledgeable about greenways nationally. For each site, we interviewed at least one person from a local public agency and one from a private group. National Park Service (NPS) personnel involved in particular projects were also interviewed. We developed a set of questions to gather information on the following implementation factors:

- PROJECT CONCEPTION AND LEADERSHIP
- PROJECT PARTICIPANTS
- CITIZEN INVOLVEMENT
- INSTITUTIONAL STRUCTURES FOR IMPLEMENTATION
- FUNDING
- POLICY AND LEGISLATIVE ENVIRONMENT
- OWNERSHIP AND MANAGEMENT
- CONFLICTS AND BARRIERS TO GREENWAY IMPLEMENTATION

Following data collection, three goals were used in analyzing the data: first, to describe and understand each case as an individual greenway project; second, to do a cross-case content analysis; and third, to extract the most important themes and patterns that can inform future implementation efforts.

Findings

Project Conception and Leadership

The seven case study areas have widely differing points of origin, from grassroots organizations to state government. Two projects are noteworthy for their grassroots initiation: Chattanooga and Indianapolis. At the other end of the scale is, of course, the state initiated program in Maryland. Between these extremes, greenway systems have been started by existing regional agencies in Portland, Toronto and Chicago. Similarly, the greenways system in Minneapolis has been initiated at the municipal and county level, through individual projects. Strong leadership is a critically important factor; the vision and commitment of one powerful individual is sometimes the key to greenway project success. Elsewhere, (such as in Maryland and Minneapolis) a strong sense of public priority, over many decades, is a more notable factor than the leadership of one individual.

Project Participants

The coalitions and partnerships that are formed are perhaps the strongest assets that predict completion of greenway corridors. Some participants are active only in certain phases of the project, while others are stable throughout a project's evolution. The NPS Rivers, Trails and Conservation Assistance (RTCA) program was involved in three of the projects we studied. State government agencies are almost always involved in greenway project development. Regional governments are typically involved, where they exist at all.

In most cases, the local unit of government is the most influential level in the planning and implementation of greenway systems. In the smaller metropolitan areas, the city or county is the level at which these projects become reality. In others, the regional greenway system may encompass dozens of local jurisdictions, each implementing small, but critical portions of the plan. Non-profit groups are involved in all seven study sites and are critical partners in many cases. The participation of the academic community is also apparent in our list of greenway implementers. Private consultants bring specific strengths to the process as well.

Citizen Involvement

Each of the seven cities we studied has some level of citizen involvement. However, the extent of public participation varies dramatically. In some cases, no formal process for public participation exists at the regional level. A loose grassroots support network seems to exist, but is active at the level of individual projects, cities and counties, without much participation around the idea of a regional system. Greenway projects cover large geographical areas, where public participation is perhaps better accomplished at a more local, project-by-project scale. Sometimes the decentralization of the public participation process has been institutionalized in a direct way, by tying funding to public involvement. Public involvement and education was particularly critical in the ultimate approval of the bond measure that funds open space acquisition in Portland. Both Chattanooga and Indianapolis benefited from the collaboration of the NPS Rivers, Trails, and Conservation Assistance Program and its public participation processes. In Chattanooga an extensive participation process reduced conflict in the implementation phases, and in Indianapolis, public involvement was accomplished with citizens mapping the greenway amenities they envisioned.

Institutional Structures

Following the formation of initial visions and commitments, greenway projects need a structure in which to work — an organizing method or institutional arrangement for implementation. This section discusses those structures for the seven case studies. As in the other parameters of our study, there is wide variety in the way participants are organized for action. First, those cities with fairly simple (or no) structures for implementation are addressed — Chattanooga, Indianapolis, and Minneapolis. Following that, the more complex situations in Chicago, Maryland, Portland and Toronto are outlined. The composition of the greenway commissions or boards are outlined, as well as a number of institutional models, as shown in Figure A.

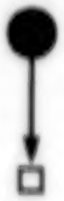
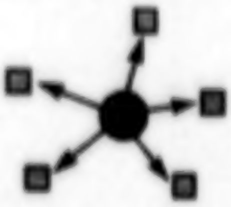
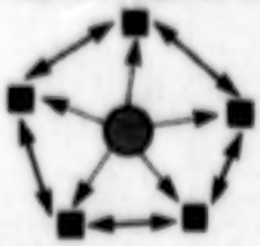
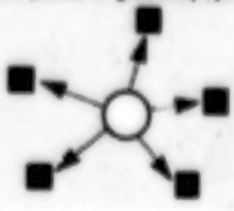
Funding

There are a number of models for funding greenway projects. At the same time, there are some consistent sources that are used throughout the country, such as the Intermodal Surface Transportation Efficiency Act (ISTEA) funds used in all the cases we studied. This section goes through funding sources and administration approaches, city by city, and then summarizes the main funding issues. Attitudes towards funding differ across cases, as does availability of funding. It is clear that just because a region has more funding available does not necessarily ensure that system's successful coordination. Likewise, a lack of money does not necessarily mean that a greenway system is not feasible. This research shows that diverse funding sources are preferable and that ISTEA is not the only answer to greenway implementation.

Policy and Legislative Environment

A number of political and regulatory factors are important for the completion of greenway networks. First, the adoption of the greenway plan itself is an important step. In some cases the plan is adopted into legal frameworks and in other cases it serves as a regional guideline or framework. Other legal factors can help or hinder the implementation of a greenway system. Of the cases we studied, Portland's example is probably most comprehensive, in terms of a greenway initiative being strongly tied to other plans for growth management and land-use planning. The Region 2040 growth concept, looking 50 years into the future, is the guiding document. Although it is not a regulatory document, is serves as an important framework. The 2040 growth concept, coordinated by the Portland metropolitan regional government, Metro, is designed to deal with

Figure A. Institutional Models for Implementation and Acquisition

Model	Example	Advantages	Disadvantages
1. Strong centralized agency directly influences projects within single (or few) jurisdictions. 	Indianapolis Chattanooga (part 1)	▪ Unified ▪ Direct control ▪ Effective for smaller jurisdictions within a larger network ▪ Strong leadership can be effective and visible ▪ Good possibilities for citizen involvement in the broad vision	▪ Potential difficulty in connecting to bordering jurisdictions or systems or for broader plans ▪ May not leverage diverse sources of funding
2. Centralized entity serves as umbrella over multiple jurisdictions and has primary control over implementation. 	Maryland Portland Chattanooga (part 2)	▪ Strong central leadership can coordinate multiple agency efforts ▪ Stronger funding base from wider geographic area ▪ Coordination of work across various geographic areas: Broader perspective and vision ▪ Allows more progressive jurisdictions to proceed without (or ahead of) slower, more reluctant jurisdictions	▪ Plan may not be a priority within each local jurisdiction ▪ Potentially less grassroots support and public participation
3. Regional agency empowers jurisdictions through initial stages and then partners for implementation. 	Chicago Toronto Portland	▪ Encourages coordination among jurisdictions ▪ Increased power at the local level ▪ Leadership can develop in local jurisdictions ▪ Regional or state funding can be prioritized across entire project	▪ Coordination may be optional between jurisdictions ▪ Implementation may be slower with shared responsibility across many agencies
4. Subordinate regional agency acts as reference point for stronger jurisdictions to implement individual pieces of greenway system. 	Minneapolis Chicago	▪ Grassroots efforts are done at a manageable scale over a long period of time ▪ Ample room for private groups to put forth initiatives ▪ Strong local control	▪ No regional leadership for coordination ▪ Shared regional vision is lacking ▪ Lack of commitment by regional government is a barrier ▪ Less ability to take advantage of funding possibilities in a holistic way for the network

Legend

○ Regional Agency

■ Local Jurisdiction/Corridor

→ Direction and strength of influence

Dominant Role ■

Moderate Role ▨

Minimal Role ☐

√1

the integration of land use, transportation, water, and openspaces. Metro's Greenspaces Master Plan is tied very closely to this long-term plan and complements regional land-use and transportation planning.

Ownership and Management

In the cases we studied, following the implementation of greenway systems, many of the properties are owned and managed at the local level through parks departments and other city and county government agencies. The maintenance of some corridors has been adopted by various groups, including Boy Scout troops and church groups. Chicago's greenway system has an infrastructure in place for ownership and management of greenways through its unique system of 150 Park Districts and six Forest Preserves.

A mixture of ownership and management is found in several places, for instance in Chattanooga, Maryland, Portland and Toronto. In these cases, the eventual management of these lands seems to be more complicated and somewhat uncertain. Some creative cooperative agreements will be needed in these cases. For instance, in Maryland's greenway program, most of the greenways involve a variety of owners and combination of public access areas, private parce [illegible] nd areas of restricted access. Many of the counties do not have the resources to monitor all of the properties acquired through the greenways program. The Waterfront Regeneration Trust in Toronto has created some unique scenarios that link ownership and management for multiple benefits. Sometimes agreements are made with private industries for a waterfront trail easement, whereby a municipality maintains the trail, but industry provides the land.

Conflicts and Barriers to Greenway Implementation

A minor amount of opposition to the greenway initiatives was reported by all of the interviewees. Several respondents, for instance from Portland and Chattanooga, attributed a phenomenal acceptance of the greenway concept to very early public involvement and education. Similarly, in Indianapolis, there was a good deal of community buy-in and acceptance. Common trends were seen across all cases: some level of opposition was found prior to greenway implementation and after the greenways were in place and people saw the positive results and benefits, there was greater acceptance for future projects. In some cases opposing factions are not necessarily against the idea of a greenway, but want money appropriated differently or worry about taking land off of the tax rolls. Beyond that, in all seven cases conflicts arose when property rights were perceived to be threatened. In addition, respondents in Toronto and Maryland pointed out the conflicting objectives and values of recreation and nature preservation, leading to conflicting project goals.

Synthesis

Key Ingredients: What does it take?

1. Commitment and Leadership

According to our interviewees, the biggest factor in greenway success seems to be commitment, not money. The people we spoke with talked at length about commitments affiliated with their respective projects — by public agencies, friends groups, and influential individuals. Grassroots support is the hallmark of the greenways movement. However, citizens' commitment is not enough. Physical implementation is a hybrid of grassroots and 'higher' support. Elected officials must join in to deliver the physical reality of a greenway system. Beyond that, the determination and motivation of a leader is critical; local organizers need to bring in key political leaders and continue to demonstrate the leadership throughout the life of the project. This leadership can then provide the structure for people to quickly and creatively make the greenway vision become reality. Out of that commitment by various individuals and groups, another important ingredient emerges — a plan of action agreed upon by these various parties.

2. Education and Public Participation

Education of and involvement by the public seem to be two of the most successful tools for greenway implementation. They generate public commitment and help minimize reactionary opposition. Several of the cities we studied relied heavily on education as a means of getting projects accepted and funded. In Portland, by educating the public about the benefits of protecting resources, the region was able to rally support for public funding. And in Chattanooga, educating and involving the people about the public process ultimately resulted in successful greenway implementation, among other benefits. It is important to recognize that these projects take a long time to complete. Therefore, patience becomes another asset.

Challenges

1. Cooperation

Regardless of the institutional structure or the size of the greenway vision, lack of coordination among agencies and organizations seems to be the biggest impediment to effective and timely implementation. In many cases, just getting different departments and personnel within the same city or county to work together is an enormous challenge. An anecdote that one respondent used helps illustrate this phenomenon. Plans were being presented by two different departments at a city hearing on the same day, neither aware of the other. One plan was for storm water retention and the other for a greenway and both dealt with the same geographic area. These groups obviously had mutually beneficial concerns, yet were not communicating in a unified way.

2. Regional Governance Simultaneous With Local Scale Work

In many places, the lack of a regional governance structure seems to be an enormous barrier. A regional greenway network needs, by definition, a real commitment to regional planning and, in many cases, to growth management. Where these priorities do not exist, greenway networks are more difficult. Furthermore, low public understanding of ecological values and development issues exacerbates the challenge. This is where the educational objective becomes critical, as promoted above. In addition, the large size of metropolitan greenway systems is a challenge in terms of public awareness and understanding. By and large, the general public has trouble visualizing an abstract land-use or geographic idea at a metropolitan scale. Breaking projects down into manageable and 'imaginable' pieces helps. Defining specific corridors or local resources can help people get invested in a bigger vision. Several of the seven cities have done just that: Portland identified 14 target natural areas and 6 trails and greenways projects in order to provide citizens an opportunity to see potential investments; Indianapolis broke its network into 14 specific corridors; Chattanooga's program is organized around 7 corridors, and Toronto divided the waterfront into 14 landscape units. Subsequently, identifying greenway priorities at the small-scale, local level is a logical follow-up. For instance, some planners have found that helping local jurisdictions develop 'feeder' trails is the key to getting them interested in regional trail systems. Officials' first concern is providing better local non-motorized transportation for their own citizens. They often need to see those local possibilities before buying into larger visions.

3. Financing

Funding is always a challenge, although not necessarily the primary one. Our research shows that diverse funding sources are preferable and that money follows good ideas. In its query of officials in charge of successful conservation programs, the Trust for Public Land compiled the following advice on funding (GreenSense, Autumn 1995) and each point is relevant here:

- POSITION THE PROGRAM AS BIPARTISAN AND NON-PARTISAN—TRANSCEND PARTY AFFILIATIONS. (A STRATEGY USED SUCCESSFULLY IN PORTLAND.)
- RESPOND TO LEGITIMATE CONCERNS. (IN MARYLAND, THE BOARD OF REALTORS CEO SUCCESSFULLY ARGUED FOR AN EXEMPTION FOR FIRST-TIME HOMEBUYERS FROM THE STATE'S REAL ESTATE TRANSFER TAX, THE LUCRATIVE FUNDING SOURCE FOR PROGRAM OPENSPACE.)
- BE ACCOUNTABLE. SHOW SOLID FACTS ABOUT ACCOMPLISHMENTS AND SAY HOW YOU WILL SPEND THE MONEY. THEN REPORT HOW YOU SPENT IT. (ANOTHER CRITICAL FACTOR IN PORTLAND'S SUCCESS STORY.)
- CHOOSE PROJECTS THAT LEVERAGE PUBLIC FUNDS. DEMONSTRATED USE OF PUBLIC DOLLARS AS SEED MONEY TO GROW PARTNERSHIPS IS APPEALING IN TODAY'S CLIMATE OF CAREFUL SPENDING.
- INVOLVE WILLING SELLERS. PRIVATE LAND CONSERVATION GROUPS PLAY CRITICAL INTERMEDIARY ROLES IN WORKING OUT WIN-WIN ARRANGEMENTS.
- NURTURE STRONG COALITIONS. FIND AND KEEP FRIENDS.

Strategic Trends

1. Public-private Partnerships

Everywhere one looks in the arena of civic life, the idea of public-private partnerships for problem-solving is promoted and practiced. Greenways are no different and, in fact, thrive on a mix of involvement by both public agencies and private partners. Especially as the positive economic impacts of open space protection and development become clear, the private world is inclined to cooperate and participate in greenway developments. A consistent theme among the professionals interviewed for this report was that the future of the greenway movement is in working more closely with the development industry, with the corporate world, and with the private philanthropic community. In some cases, a lack of coordination with the building and development world has disadvantaged greenway efforts.

Multiple Objectives

The future of the greenway movement depends, it seems, on an expansion of objectives and integration with other social and ecological issues. More and more, the multiple benefits of greenways are being promoted and advertised. At the same time, much of the fuel behind greenway efforts has historically come from the parks and recreation fields. This is changing. In the cases we studied, a prominent theme was integration, exhibited in two main ways — socially and ecologically. First, some of the most exciting greenway efforts have a socially responsive purpose. In fact, they are being implemented because of the positive effects on disadvantaged populations through neighborhood revitalization, employment opportunities, educational programs, and involvement of urban youth. In the opinion of one respondent, the key factor to the success of Chattanooga's project was the focus on social and cultural revitalization — an area of high community interest. Through this effort, citizens learned of empowerment in civic life.

Secondly, the multiple objectives of land-use planning and growth management are increasingly important stimuli for greenway development. Part of the challenge in this regard is the perennial issue of defining greenways. Much of the restoration work, both in and outside urban areas, is broader than greenways themselves. According to one of our respondents, the parochial parks and recreation focus of the greenway movement is part of the problem. He tries to achieve more than one result per greenway project, so that when people ask about greenways they will automatically assume that other issues have been dealt with in the process, such as habitat protection and water quality.

Having these other objectives front and center in the greenway planning process is vitally important. Portland demonstrated this by tying their open space program to the issue of growth management and the protection of natural habitats. And in Toronto, natural features and bioregions have motivated the greenway vision. The linkage of greenway planning to other watershed planning issues is becoming more widespread, although rarely implemented along those lines, due to jurisdictional boundaries. One respondent in Chicago stated that a watershed approach has been implicit in their process, but not so much at the plan's inception. In the last three or four years, their awareness of urban watersheds has been elevated (via storm water management plans), but this awareness is not yet tied to smaller scale greenway plans. He called this the 'new frontier' for urban greenway planning. Natural feature protection and restoration will, like the restoration of neighborhoods and jobs, be central to successful implementation strategies for urban greenways. ◆

Photo: National Park Service

A comparison of greenway implementation strategies was conducted to help inform the implementation process in the Southeast Michigan Greenways project. This research was carried out by faculty and graduate students in the Landscape Architecture Program at the University of Michigan, in collaboration with partners in the Southeast Michigan Greenways project. The case study sites include the following metropolitan regions: Chattanooga, Chicago, Indianapolis, Toronto, Portland (Oregon), Minneapolis, and the state of Maryland.

Introduction

The goal of the Southeast Michigan project is to provide a process for the citizens and officials of the region to create an interconnected greenway system in the seven county area. Built upon public involvement, this process is developing an information base and implementation framework that will make the greenway system possible. This greenway network will provide multiple benefits including, but not limited to conservation, recreation, transportation and sensitive regional revitalization. Major collaborators on the project include the Rails-to-Trails Conservancy of Michigan (RTC), the National Park Service Rivers, Trails and Conservation Assistance Program, Michigan Department of Transportation, Michigan Department of Natural Resources, Community Foundation of Southeast Michigan and county park and planning organizations.

The purpose of this work is to review a number of case studies at the national level to determine those factors that contribute to the successful implementation and management of greenways systems. We sought to examine a number of North American examples, to learn from them, and then apply that knowledge here at home. Following this case study analysis, the Southeast Michigan Greenways team will assess the current environment in Southeast Michigan to learn what elements of successful greenway implementation already exist in our region. What elements of successful greenway system coordination does the region and/or state already have that can apply to Southeast Michigan — what legislation, land protection tools, public and private organizations, and funding opportunities? What is the region and/or state lacking that we should consider or develop? This report will hopefully be useful for addressing these issues.

Literature Review

Greenways are receiving wide attention in both the popular press and scholarly literature. Six years ago it was estimated that over 500 greenway projects are either complete or in progress in cities across America (Grove, 1990). It is beyond the scope of this report to document all of the literature that addresses these specific greenway projects, or the issues they encounter. However, it is useful to highlight the main factors that have been addressed, especially those dealing with implementation. A number of books provide valuable information on greenway design and planning (Little, 1990; Flink and Searns, 1993), particularly for municipal initiatives and citizens' mobilization. Some reference work centers on a review of recent projects (Didato, 1990), rail-to-trail conversions (National Park Service, 1992; Ryan, 1993) and on the promotion of trails of all kinds nation-wide (American Hiking Society, 1990; Vento, 1991). The National Park Service has contributed significantly (see NPS, 1983, among many other documents).

In addition, researchers have devoted a good deal of effort to studying specific aspects of greenway development (Cook and Van Lier, 1994). For instance, a recent special issue of *Landscape and Urban Planning* (October 1995) was devoted entirely to greenways, with articles on the greenway movement and its origins, and on the planning, perceptions, analysis, and implementation of greenway systems. Other areas that have received particular attention are the economic impacts of greenways and trails (National Park Service, 1991), ecological issues associated with greenway systems (Smith and Hellmund, 1993; Ahern, 1991; Labaree, 1992), conflict resolution in trail development (Moore et al., 1992), and the role of greenways in urban regeneration (Trust for Public Land, 1994).

However, little research has focused closely on the greenway implementation process, partly because many of the regional greenway systems have only been planned over the last decade and systematic implementation has only begun in many areas. Much has, of course, been written on the implementation of other public spaces and facilities; an entire body of literature focuses on 'how things get done' in public administration (Lindblom, 1959; De Young and Kaplan, 1988; Sanger and Levin, 1992). In addition, the funding options for greenway development are fairly clear. Ahern (1994), in an article on greenways as ecological networks in rural regions, defines a set of implementation tools and techniques. These include acquisition, regulation and voluntary options. Still, the other details of implementation — institutional structures, citizen involvement, leadership roles, etc. — are less clear.

The section on implementation in the *Landscape and Urban Planning* referenced above includes two notable articles, both asking in different ways — how do greenways get done? First, Hoover and Shannon (1995) identify and describe the opportunities for collaboration and the implications for those opportunities, using the Tug Hill region of New York as a case study area. Likewise, for the metropolitan Vancouver region, Quayle (1995) reports on the decision-making process for implementation of a greenway system in Vancouver, British Columbia. These two papers have perhaps the closest relevance to our work and are used to demonstrate some critical points in the Discussion section of this report.

A quote from Quayle's work sets the stage for the research presented in this report: "We frequently perceive crises of governance where nothing seems to get done. Even after public policy is developed, 'implementation' by definition does not actually get things done, but merely lays the groundwork…In looking at public policy implementation, relevant considerations include the organization of the players and the approach to decision making" (1995, p.464).

Photo: National Park Service

Research Methods

Case Study Selection Criteria

With a vast number of contemporary greenway projects to choose from, we developed a set of selection criteria to choose sites on which to focus our research. While we recognized that the chosen greenway systems might not satisfy all of these factors, this exercise provided a process for using consistent standards. The criteria are shown below, in no particular order of importance:

- **NETWORK OR SYSTEM.** THE GREENWAYS MUST HAVE INCORPORATED A WEB OF LINEAR OPEN SPACES. THIS WOULD OMIT THE INCLUSION OF A REGION WITH ONE LONG GREENWAY, FOR INSTANCE ALONG A MAJOR RIVER, WITH NO CONNECTIONS TO UPLAND REGIONS.
- **REGIONAL SCALE AND MULTI-JURISDICTIONAL SCOPE.** THE SYSTEMS MUST HAVE ENCOMPASSED MULTIPLE POLITICAL JURISDICTIONS (FOR INSTANCE, COUNTIES), RATHER THAN EXISTING WHOLLY WITHIN ONE TOWN OR COUNTY.
- **MULTIPLE FUNCTIONS AND OBJECTIVES.** THE SYSTEMS MUST HAVE BEEN PLANNED FOR MULTIPLE PURPOSES. FOR INSTANCE, WE SOUGHT TO EXAMINE GREENWAY NETWORKS THAT FOCUS SIMULTANEOUSLY ON TRANSPORTATION, CONSERVATION, AND/OR RECREATION.
- **DOMESTIC CASES.** THE FOCUS WAS ON CASES IN THE UNITED STATES, ALTHOUGH CANADIAN EXAMPLES WERE CONSIDERED, WHERE SIMILAR LEGAL, ECONOMIC, AND CULTURAL PARAMETERS EXIST.
- **AVAILABILITY OF DATA.** WE FOCUSED ON CASES WHERE DATA COULD BE OBTAINED RELATIVELY EASILY WITHOUT ON-SITE VISITS, AT LEAST FOR THIS PHASE OF THE PROJECT.
- **IMPLEMENTATION.** SELECTED CASE STUDY REGIONS MUST HAVE BEGUN THE IMPLEMENTATION PHASE, AT LEAST IN PART, AND HAVE PASSED BEYOND THE PLANNING STAGE SINCE IMPLEMENTATION STRATEGIES ARE THE FOCUS OF THIS RESEARCH.
- **SIMILARITY TO DETROIT METROPOLITAN REGION.** TO THE EXTENT POSSIBLE, WE SOUGHT CASE STUDY EXAMPLES THAT COULD PROVIDE INSIGHTS TO GREENWAY IMPLEMENTATION IN SOUTHEASTERN MICHIGAN. FOR INSTANCE, CASES MUST INCORPORATE A METROPOLITAN AREA. BEYOND THAT, A PREFERENCE WAS PLACED ON COASTAL OPTIONS, SIMILAR DEVELOPMENT PATTERNS, AND SIMILAR SIZE.

By applying the criteria shown above to existing greenway sites, a 'first cut' was made to narrow the focus to 12 greenway systems. A coarse level of analysis was done for these 12, (especially the quantitative factors) and subsequently we chose 7 to study at a more detailed level. Please see Appendix A for the list of cities originally considered in our selection process.
The seven selected sites are:

- CHATTANOOGA, TENNESSEE
- CHICAGO, ILLINOIS
- INDIANAPOLIS, INDIANA
- STATE OF MARYLAND
- MINNEAPOLIS, MINNESOTA
- PORTLAND, OREGON
- TORONTO, ONTARIO, CANADA

Document Review

Document collection for each of the potential sites began in the early stages of the project (for a couple dozen sites) and continued through selection of the seven sites. The material collected included promotional pieces, maps, planning documents, fact sheets, video tapes and other pertinent information. By reviewing this material we were better able to understand the specifics of each region. These sources are listed in Appendix C. This documentation was the first source for gathering pertinent data. Studying the documents prior to conducting interviews allowed us to formulate additional questions which could only be answered by talking with knowledgeable people at the seven sites.

Key Informant Interviews

The most substantive part of our comparative data came from interviews with key informants at each site. The interviews yielded significant, and often more specific, implementation data than the existing literature. In selecting people to interview we relied on referrals from people knowledgeable about greenways work on a national level. In addition, we gleaned names from the planning documents for each of the seven sites. The goal, within each of the seven cases, was to interview at least one person from a local public agency, as well as one from a private group, such as a not-for-profit collaborator. In addition, several National Park Service cooperators were included, as appropriate for particular projects.

An initial phone call was placed to each potential interviewee requesting an interview and arranging for a future telephone conversation. (See Appendix B for a complete listing of all interviewees). After the initial call, a letter describing the research project and an interview guide (Table 1) were mailed to the interviewee. This helped the participants become familiar with our objectives and the types of questions we would be asking. We stressed that they would not be asked to answer all of the questions shown. The interviews, which typically lasted 30-60 minutes, followed a conversational style using the list of questions as a loose guide. This allowed the flow of conversation to direct the sequence of questions. Sometimes one or more questions would be addressed within one long response, thus redirecting and shaping subsequent questions. Notes were taken by both authors during the interviews (made possible through the use of a speaker phone for the interviews). Often at the conclusion of the interview additional literature was requested, as were the names of other potential interviewees.

Analysis

Three goals were used in the analysis of our data: first, to describe and understand each case as an individual greenway project, as reflected in the "Orientation to Seven Case Studies" section; second, to do a cross-case content analysis, found in the "Findings" section; and third, to pull out the most important themes and patterns, found in the "Discussion" section.

Photo: Oakland County Planning Department

Table 1. Interview Guide

1. Project Conception and Leadership

- Who initiated the regional greenways idea?
- Is/was there an identifiable leadership group or person in the beginning?

2. Project Participants

- Who got involved after the vision was presented?
- Have coalitions and partnerships been formed?
- Is there public agency involvement and activities? (i.e.. state, county, municipal)?
- Is there national/local involvement of NGOs, non-profit groups?
- Are there partnerships or cooperative agreements?

3. Citizen Involvement

- What type and what level of public participation is involved?

4. Institutional Structures

- Is there regional coordination and if so, what institutional structures facilitates it?
- What type and how much power, if any, does the overall umbrella organization have?
- What are the levels of organization?
- Is there a prioritization being used in implementation (i.e. local vs. regional)?

5. Policy/Legislature

- What is the legislative and policy environment for the greenway planning and implementation? Authorizing legislation, etc.?

6. Funding

- Where do/did funds come from? (federal, state, regional, county, local, private)
- Is there an established and ongoing funding mechanism in place? Describe.

7. Conflicts/Barriers

- What was the political and economic climate as the project was being planned?
- Were there specific conflict resolution strategies used?
- What have been the barriers (i.e. who blocked the project, was it trial and error)?

8. Ownership and Management

- What agency owns greenways?
- What agency manages the greenways now?
- What is the management agency's objectives, responsibilities, tools?

9. Evolution/Timeline

- Is the plan being carried out?
- How much of the plan is completed and are there ongoing projects?
- What is the evolution/timeline of the greenway (stages of development)?

The seven greenway sites are briefly described here to orient the reader to the basic history and evolution of each. Our research emphasizes that although an established greenway system is being implemented in each area, each one has unique characteristics, participants and features. Figure 1 shows the location of the seven cases.

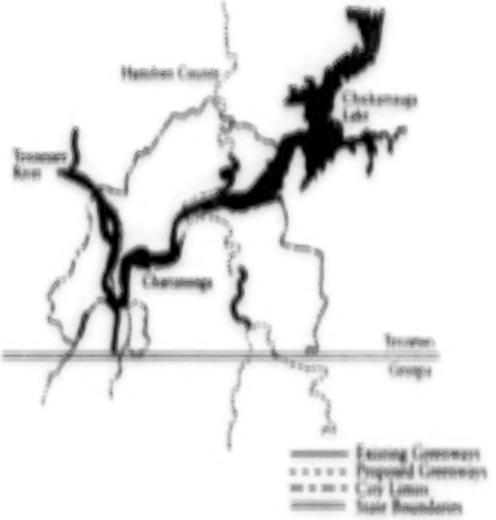


FIGURE 2. Chattanooga Greenways System based on the Tennessee River and its tributaries

Orientation to Seven Metropolitan Regions

Chattanooga, Tennessee

The City of Chattanooga is the hub of a proposed greenway system along the Southeast Tennessee River Valley. Efforts toward a regional system began in 1981 through the initiative of an innovative citizen's group that sought to revitalize the city. One of Chattanooga's most notable successes within the area is its RiverPark, a planned 20 mile greenway along the Tennessee River. Although the RiverPark is not fully implemented, it will eventually incorporate 10 miles of riverfront on each side of the river. This project has been hailed as a successful redevelopment effort for the city, connecting new housing, parks, and businesses to anchor downtown revitalization. An important objective for the RiverPark is to get the public down to the river and thereby to encourage them to be better stewards of the land. Before 1982, most of the population did not know that the river was even there and saw the river area as only a place for manufacturing and highway transportation. The siting of the Tennessee Aquarium on the river was part of the mission to increase awareness of river and stream ecology.

The RiverPark is now the spine of the larger 75 mile long greenway for the Chattanooga metropolitan area. This system consists of five separate greenway corridors that link to the Tennessee RiverPark and individual groups which take responsibility for each segment. The Trust for Public Land has worked actively as a coordinator. The National Park Service Rivers, Trails, and Conservation Assistance Program, in cooperation with a number of other agencies, completed the larger regional plan, 'Greenways for the Southeast Tennessee River Valley,' in 1995. The plan focuses on a number of recommendations: to focus on the Tennessee River as the spine of the regional greenways system; to establish coordination among regional planning entities; to establish a regional greenways advocacy organization; and to establish a mechanism for creating and managing greenways across political boundaries. This young plan has not been fully adopted or implemented by the relevant jurisdictions. It is interesting to note that local greenway activists did not recognize the Tennessee RiverPark as part of the regional greenway vision. That connection was made through the National Park Service work. (In this report, the Chattanooga case study is viewed broadly to include both the RiverPark initiatives in the city itself, as well as the larger regional vision for the Southeast Tennessee river valley.)

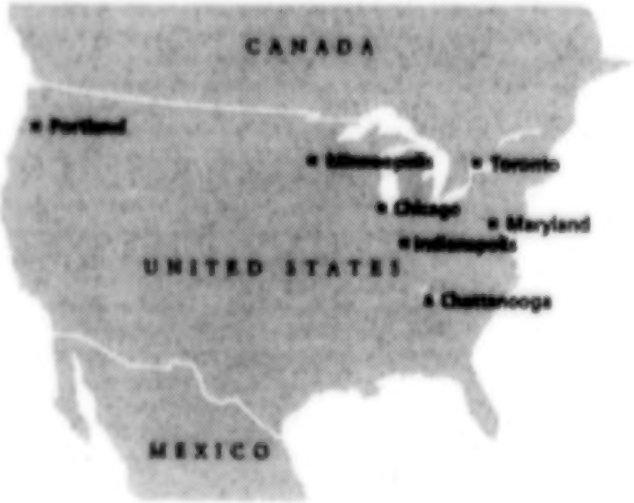


FIGURE 1. Map of North America showing seven case study sites.

Chicago, Illinois

The Northeastern Illinois Regional Greenways Plan involves six counties in and around the Chicago metropolitan region. The plan was developed through a partnership with Openlands Project and the regional planning agency, Northeastern Illinois Planning Commission (NIPC). This partnership sponsored local level workshops and design charettes around the idea of a regional greenway system. The resulting input was used to develop the Regional Greenways Plan, adopted in 1992. Today one of the Plan's primary goals is linking existing municipal trails by "filling in the gaps." However, the complexity of this region's plan arises from a coordination issue —the challenge of coordinating over 260 jurisdictions and more than 150 Park Districts and Forest Preserves. A 1994 "State of the Greenways Report" showed that all six counties and the City of Chicago have actively implemented parts of the 1992 plan. Approximately 50-100 miles of new greenway corridors are in place as a result of the plan.

Simultaneously, the Friends of the Chicago River, in collaboration with RTCA, has been involved in grassroots projects on the Chicago River. This non-profit group is one of several stream or river advocacy groups in the Chicago region who uses the greenway theme as a means for achieving multiple objectives. Educating the public about the Chicago River and its value as a resource, especially in the predominantly urban populations, has been key to their ultimate success. The Friends of the Chicago River promotes public access to the river and river improvement projects. One key strategy of the Friends' group has been to get river-based activity on the ground as quickly as possible, with projects ranging in size from one to twenty two acres and involving local residents as much as possible. Projects have been implemented by using the unskilled labor of local youth, thereby providing environmental education and training.

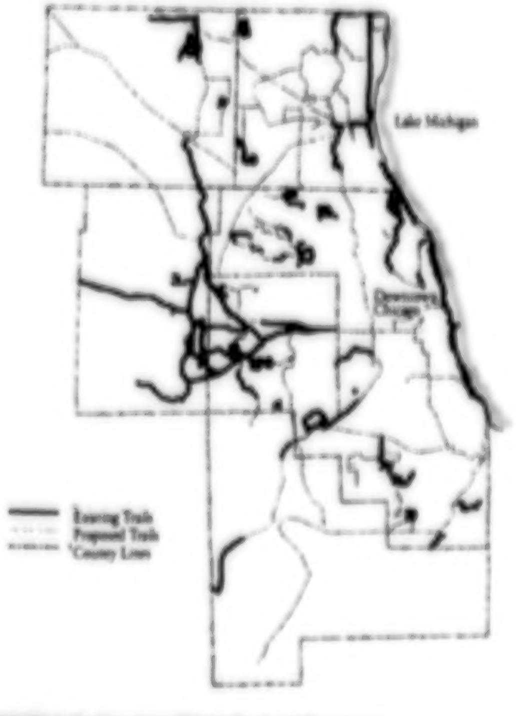


FIGURE 3. Northeastern Illinois Regional Greenways (adapted from Northeastern Illinois Regional Greenways Plan Map)

Indianapolis, Indiana

The Indianapolis Greenways project is sponsored by the city park department's planning division, Indy Parks Greenways. The Indianapolis Greenways Plan proposes a 174.5-mile greenway system within the City of Indianapolis and Marion County, Indiana. The vision includes over 150 miles of paved trails linking more than 125 destinations, including 57 parks. The 14 corridors will follow along 1 river, 10 streams, 1 canal and 2 abandoned rail corridors. A high percentage of the proposed system is already owned by the city and the county, due in part to a 1905 park plan. The 1994 plan was the result of an extensive visioning process by the city and county citizens, who continue to have direct involvement in the project as Indy Parks guides the process and works closely with all parties involved. A consolidated city/ county government in Indianapolis and Marion County helped make the county boundaries appropriate for early implementation.

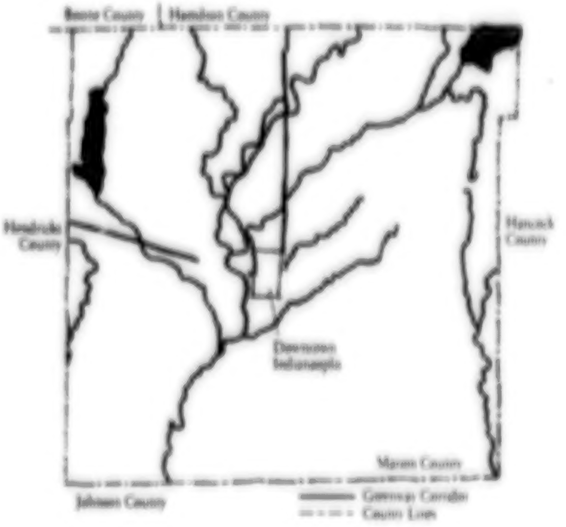


FIGURE 4.

Indianapolis Greenway System based on the White River and its tributaries. (adapted from Indianapolis Greenways Map)

Early on, with the assistance of the NPS Rivers, Trails, and Conservation Assistance Program, the project had a more regional focus rather than its current focus within one county. Discussions took place with the counties to the north, south and west. Indianapolis Department of Natural Resources helped facilitate some links, for instance along the White River going north out of Marion County. The White River has had the most simultaneous greenway attention across county lines, due in part to the work of the White River Commission (a group that is made up of city, county and state interests). Now that the project is underway, the goal is to coordinate and make connections with municipalities outside of the county who share contiguous greenway resources. In addition, Indianapolis wants to set the stage for other municipalities statewide to implement greenways. There is work underway to create a larger regional plan. Two examples are: 1) the B&O Corridor, designed to link four counties across 56 miles from Indianapolis to Wabash and 2) the White Lick Creek East Fork Greenways project, connecting 25 miles southwest into Hendricks County.

State of Maryland

The Maryland case study area differs from the other six in that it does not focus on one metropolitan region but rather on an entire state, incorporating a variety of waterways and other natural features. In Maryland, one of the driving factors for establishing greenways is protection from the rapid growth that is sweeping parts of the state. For example, the Maryland Office of Planning estimates that the number of developed acres of land in Hartford and Cecil Counties will increase by 61% and 50%, respectively, by the year 2020. The goal of the greenways program is to create a statewide network of greenway corridors that forms a green infrastructure to provide ecological, recreational and economic benefits. This network includes ecological corridors that serve environmental purposes as well as corridors with trails and other recreational features designed for public access.

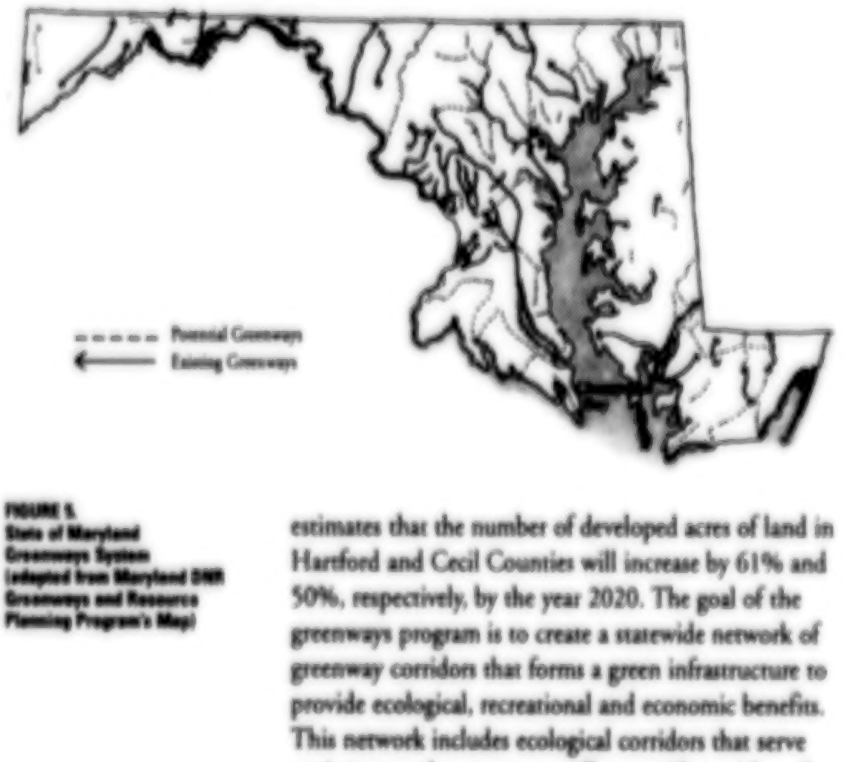


**FIGURE 5.
State of Maryland
Greenways System
(adapted from Maryland DNR
Greenways and Resource
Planning Program's Map)**

Within the state there are already over 800,000 acres of protected land and 900 miles of existing greenways, with an additional 1,000 miles being proposed. The Maryland Greenways Commission was established in 1990 with the goal of creating a statewide, natural infrastructure which would protect and connect the important corridors throughout the state. The coordination of federal, state, local and private efforts is necessary to achieve cohesive results. Public/private partnerships exist mainly between the Commission, other state departments, local and national land trusts and businesses. Unique to Maryland is Program Open Space (POS), their prominent land protection program. POS funding, together with ISTEA monies, have been the primary sources for land acquisition and trail development. With a growing network of greenways, the state's major focus is on management. Particular management concerns arise in establishing large, regional systems involving multiple jurisdictions where park staff and local resources are scarce.

Minneapolis, Minnesota

Minneapolis is well known for its extensive parks, trails and open space system. At the turn of the century a river walk was established alongside the Mississippi River and its tributaries; today's successful greenways are largely a product of those early visions. While open space protection has long been a priority in the Twin Cities area, there is neither a regional greenways plan nor the coordination mechanism for a regional network. Greenway planning is, for the most part, done incrementally at the level of individual municipalities and counties. The Metropolitan Council of Minneapolis and St. Paul was created in 1967 to coordinate development in a seven county, 140 jurisdiction region. However, it has not been able to achieve a level of coordination among the various jurisdictions that would be necessary for a regional greenways planning effort.

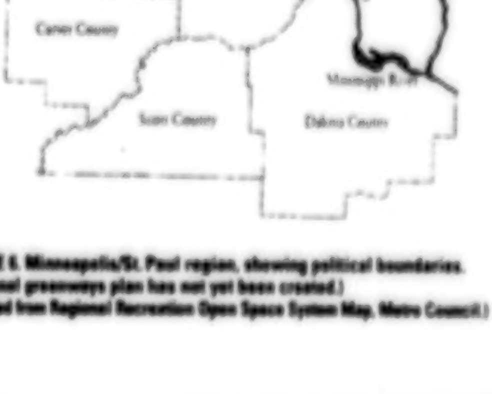


FIGURE 6. Minneapolis/St. Paul region, showing political boundaries. (Regional greenways plan has not yet been created.) (Adapted from Regional Recreation Open Space System Map, Metro Council.)

However, in recent years, several other organizations have attempted to organize around the notion of linear open spaces. For instance, the Design Center for the American Urban Landscape at the University of Minnesota has provided the groundwork for integrated greenway planning. Open space and trails in the seven county region have been mapped by the Design Center, enabling those resources to be analyzed together for the first time. The resulting map illustrates the abundance of trails in the region, indicating the available greenway resources and potential linkages. The Trust for Public Land has also been active in recent years in promoting regional greenway thinking in the Minneapolis region, through its Green Cities Initiative, and other efforts.

Portland, Oregon

Citizens of the Portland, Oregon metropolitan area have been facing the competing pressures of growth and land preservation. During the first half of the 1990s, the population of the four county area (including one county in Washington State) has grown by an additional 110,000 people. In response, Metro, Portland's regional government, sought to protect and set aside open space, natural areas, habitat and recreation areas in an effort to preserve the high quality of life. A 1989 inventory of recreational and park facilities showed an increasing interest in having recreation opportunities close to home. This inventory also brought community members together around the goal of open space protection and the adoption of the Metropolitan Greenspaces Master Plan.

In 1992 a $200 million open space bond measure, designed to protect those resources, was rejected, at least partly due to lack of specificity in the bond measure package. However, through extensive education and outreach to the Portland metropolitan community, the second try at a $135.6 million bond measure was successful in 1995. The funding from this measure enables the purchase and protection of critical pieces of the region's open spaces. Metro identified 14 regional natural areas (specific, large-scale sites, geographically distributed across the region), as well as six trail and greenway projects, 40 miles long in total. Currently the 20 natural areas, trails, and greenways, totaling an acquisition goal of over 6000 acres, are awaiting acquisition for conservation and recreation. Although not solely a greenway project per se, the Portland case includes greenways as an important feature of its open space protection effort.

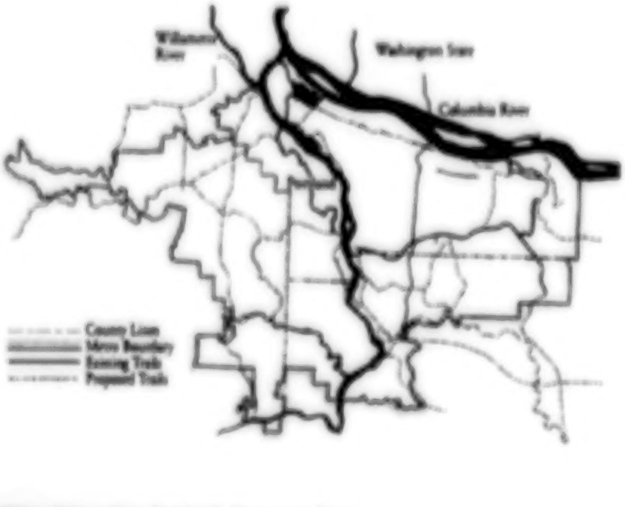


FIGURE 7. Metropolitan Portland's Greenway System (adapted from Open Space, Parks and Trails Regional Target Areas Map, Metro)

A unique elected government unit, Metro is responsible for regional parks and greenspaces, along with planning for transportation and land use. Metro's main function is to coordinate various jurisdictions' land use plans, which must also be consistent with the state's goals and the policies of the Regional Framework Plan scheduled for approval in 1997. The greenways plan was part of that mission. The Metropolitan Greenspaces Master Plan is a model of cooperative planning, involving more than 50 government agencies, many conservation organizations, businesses, neighborhood associations, friends groups, and interested citizens in Oregon and Washington. Since 1990, 22 of the 24 cities in the four counties have passed resolutions supporting the Greenspaces program.

Toronto, Ontario Canada

The Royal Commission on the Future of the Toronto Waterfront was responsible for a three year study, from 1988 to 1991, which proposed developing greenways within a 4,000 square mile area known as the Greater Toronto Bioregion. The Toronto greenway concept proposes a two-tiered system with arterial greenways that establish an interconnected framework across the region and local connectors within each community. The results of that study were included in the book *Regeneration*. It proposes an interregional greenway system totaling 560 miles, based on watershed boundaries.

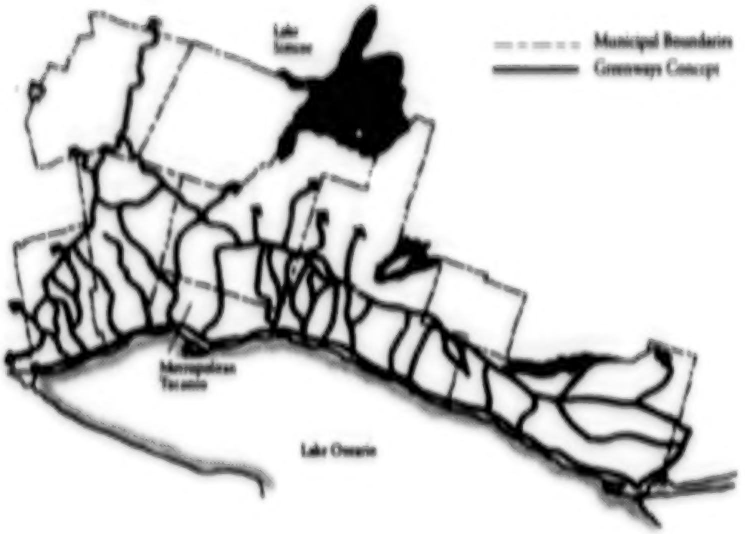


FIGURE 8.
Greenways concept for the Toronto Bioregion.

The Waterfront Regeneration Trust (WRT) replaced the Royal Commission in 1992 and was established to implement the Commission's findings. Subsequently, WRT prepared the 1995 Lake Ontario Greenway Strategy (LOGS) as an initial project along the Lake Ontario waterfront. LOGS is a broad conceptual framework currently used as a planning guide. The area of interest for the waterfront greenway extends in to the first major barrier along the lakeshore, whether a railroad bed, highway, or other feature. The WRT has found a huge demand in the greater Toronto region for trails, and municipalities eager to provide them. The Waterfront Trail, a major arm of the greenway network will link together 74 small waterfront parks and promenades, 40 significant natural habitats and 25 marinas. A lot has been done relatively quickly. The 125 mile waterfront greenway is 87% complete; some already existed, but critical connections have now been made. Ten waterfront parks have been revitalized to date through the program.

Summary of Seven Case Study Sites

There are some important similarities and differences among the seven case studies used in this project, that impinge on the planning and implementation of their greenway networks. First, of course, size and scope are dramatically different, from the smaller cities of Indianapolis and Chattanooga to the entire state of Maryland. These scale differences impact implementation, as shown in the following sections. In addition, the original motivations for the greenway networks differ. Table 2 shows the objectives of each system. Note: these objectives are taken from the greenway plans in the respective cities, and do not necessarily represent the ultimate outcomes and benefits of the greenways. Objectives certainly change over time, so this only represents a snapshot from primary planning documents.

The most common objectives are recreation, conservation, and neighborhood enhancement. In most places, the protection of natural features is a particularly strong motivator. For instance, in Indianapolis, natural features were front and center for the entire project, according to one interviewee. Other strong motivations across this sample are environmental education, transportation, and water quality protection. Some of our respondents reported that greenway projects have particularly focused on water management objectives more recently, including the protection of stream corridors and watershed planning. It is interesting that economic and growth management issues are less likely motivations up front. Again, these are sometimes secondary effects that are not necessarily motivating factors at the outset. Many of these cities might certainly add these as objectives once implementation is underway. Similarly, scenic

Table 2. Comparison of original greenway objectives for seven case study sites

Greenway*	Recreation and Fitness	Conservation and Wildlife	Linkage of Neighborhoods, Parks	Education	Economic	Scenic Quality	Nonmotorized vehicular transport	Historic Preservation	Growth Management	Water quality/ protection
Chattanooga	■	■	■		■		■			
Chicago	■	■	■	■		■	■			■
Indianapolis	■	■	■	■			■			■
Maryland	■	■	■	■	■	■	■	■	■	■
Portland	■	■	■	■					■	■
Toronto	■	■	■		■	■		■		■

*Minneapolis has been omitted because it does not have a formal regional greenway plan.

Table 3. Comparison of greenway system characteristics for seven case study sites

Metropolitan Area	Name of Plan/Date	Jurisdictions	Length	Waterbody/ Natural Features	Boundaries
Chattanooga	Greenways for the SE Tennessee River Valley (1995)	8 counties	Over 75 miles proposed	Tennessee River, and other Rivers and tributaries	County lines
Chicago	NE Illinois Regional Greenways Plan (1992)	6 counties	676 miles existing 918 miles proposed	Chicago River and tributaries Lake Michigan	County lines
Indianapolis	Indianapolis Greenway Plan (1994)	City of Indianapolis and one county	174.5 miles proposed	White River and tributaries	County/City lines
Maryland	Maryland Greenways Atlas (1992)	23 counties (entire state) and Baltimore City	900 miles existing 1000 miles proposed	Potomac and other rivers and streams statewide	State lines
Minneapolis	None	7 counties	–	Mississippi River and tributaries	County/City lines
Portland	Metropolitan Greenspaces Master Plan (1992)	3 counties (coordinated with 1 county in WA state)	350 miles proposed	Willamette and Columbia Rivers and other streams and natural areas	County lines
Toronto	Lake Ontario Greenway Strategy (1995)	9 regional jurisdictions	560 miles proposed; 125 miles Waterfront Trail	Lake Ontario, Niagara and Oak Ridge Moraine	Greater Toronto Bioregion

quality and historic preservation are mentioned less often, but are sometimes important long-term benefits.

Table 3 summarizes other major factors among the seven case studies. All of the projects are multi-county in scope, except Indianapolis. (Indy is beginning to cooperate with adjoining counties to connect a larger system). They range from 3 to 9 counties in the metropolitan areas, with Maryland's project encompassing all 23 counties of the state. Project histories are more consistent. Most of the actual greenway plans have been drafted in the 1990s; however, many of the projects have evolved since the 1980s. Although Minneapolis does not have a formal greenways plan at the regional level, greenway corridors and other parks and open spaces have been a priority since early in the twentieth century. Similarly, Maryland has a long history of legal protection of its river and stream system, so that although the greenway plan is relatively recent, the structure of protected corridors has existed for a long time.

Where available, we have included in Table 3 the length of each greenway system. The sizes vary dramatically, with Chattanooga being the smallest. Indianapolis, Portland and Toronto corridors are relatively similar in length, although this measurement in Toronto is along the lakefront only. The size of the larger inland system is unknown, but much larger. Similarly, the Minneapolis measurement is not known, since a regional system is not coordinated at this time. The greenway system for Chicago and for Maryland are of similar sizes at the larger end of the spectrum.

Each of these systems is focused on a natural water body as its main framework. These are river systems in most cases with two cities, Chicago and Toronto, located on the Great Lakes. It is interesting that only Toronto has focused strongly on other natural features in defining its greenway system. In addition to Lake Ontario, Toronto uses the Niagara Escarpment and Oak Ridge Moraine as organizing geological elements in the greenway planning. Similarly, Toronto uses watershed boundaries to define the greenway system, whereas all of the other networks use jurisdictional (county and city) boundaries.

New greenway segments have been completed in all of these metropolitan regions. The backbone of the Chattanooga project is the RiverPark in the city itself, where six miles of the urban greenway have been completed. In Chicago, between 50 and 100 miles have been built since the Northeastern Illinois Regional Greenway Plan was created. Indianapolis has completed 47 miles of its greenway network and hopes to have half of the project complete by 1999. In the other cities, the systems are partially implemented, but no actual mileage is available at this time.

The findings of the document review and interview processes are described in this section. These results do not follow the exact organizational structure of the interview questions (Table 1). Some of the 12 items in the interviews are combined or reordered, where this is more effective for reporting. For instance, we found a good deal of overlap between the first four interview categories (coalitions and participants, coordination and partnerships, levels of organization, and leadership). The following sections incorporate these findings under eight headings: Project Conception and Leadership, Project Participants, Institutional Structures, Citizen Involvement, Funding, Policy and Legislative Environment, Conflicts and Barriers, and Ownership and Management. The group of questions regarding Evolution and Timeline on the interview guide are incorporated throughout this report, for instance in Table 3 and elsewhere.

Findings

Project Conception and Leadership — Who Started the Greenways Project?

The seven case study areas have widely differing points of origin. Traditional organizational structures for implementation are top-down and bottom-up. In the former, two factors are common for effective implementation — the provision of resources and the specificity of instruction. In the latter, individuals are credited with control (Quayle, 1995). Table 4 shows a scale from the grassroots (bottom-up) approach on the left through the state level (top-down) approach on the right.

Grassroots Initiation

Two projects are noteworthy for their grassroots initiation: Chattanooga and Indianapolis. Not coincidentally, these are the two smallest cities in our sample. It is certainly easier for a grassroots effort to take hold in cities this size, compared to the cumbersome nature of this undertaking in a city like Chicago or Minneapolis.

In Chattanooga, the community focused on the Tennessee River in a three year planning project from 1982-1985. The Mocassin Bend Task Force — a local "blue ribbon" group — developed the conceptual plan for the Tennessee RiverPark. Out of that process, including hundreds of public meetings, one of the main themes that emerged was that the public felt strongly about the river and wanted access to it. At this point, Chattanooga's RiverPark was envisioned and it was decided that an entity should be developed to acquire river land and to implement a Tennessee River Park Master Plan. Subsequently and independently, a citizen-initiated parks committee (based in a nearby suburb) was established to search for additional parks and recreation land. When all they could find was land along a neighborhood stream, the group recognized the potential of greenways in providing additional lands AND linkages to other open space areas.

Similarly, in Indianapolis, thousands of volunteers have actively been involved in the greenway movement from the beginning. They continue to do so, by annually removing over one million tons of trash and debris from the banks of the White River and its tributaries. Chicago's greenway plan relies on initiative at the municipal level for implementation. Similarly, the greenways system in Minneapolis has been initiated at the municipal and county level, through individual projects. Since a regional plan has not been created, this system relies on local initiation.

Regional and State Initiation

At the other end of the scale is, of course, the state initiated program in Maryland. However, due to the small size of this state, it can be considered a regional system in terms of size, if not institutional structure. Between these extremes, several greenway systems have been started by existing regional agencies: Metro in Portland (as part of its Metropolitan Greenspaces Master Plan); Waterfront Regeneration Trust (through federal authorization) in Toronto; and Northeastern Illinois Planning Commission in Chicago. The Chicago network was also initiated by Openlands Project, a non-profit group involved in open space projects from small community gardens, to individual parks, to entire greenways.

Leadership

Strong leadership is a critically important factor in many of the cities we studied. In fact, the vision and

Table 4. Initiating groups or organizations

	Bottom-Up Approaches	>>>>>>>>>>>>>>>	>>>>>>>>>>>>>>>	>>>>>>>>>>>>>>>	Top-Down Approaches
	Grassroots efforts by private citizens	**NGO's or other organized citizen groups**	**City or county**	**Regional government**	**State or provincial government**
Chattanooga	■				
Chicago		■		■	
Indianapolis	■				
Maryland					■
Minneapolis	■		■		
Portland				■	
Toronto				■	

commitment of one powerful individual is sometimes the key to greenway project success. For instance, Oregon's Governors Tom McCall and Robert Straub were early promoters of the greenway concept and Portland's project is an outgrowth of that foresight. The Willamette River corridor was declared a greenway in 1967, long before many of the current projects began. In addition, several cases show that a mayor's belief in a specific project increases its chance for survival and ultimate success. David Crombie, former Mayor of Toronto, for instance, was the visionary behind the Toronto Waterfront project and was extremely influential in its success. The Royal Commission on the Future of the Toronto Waterfront took the leadership role, especially inspired by Mr. Crombie (now a federal politician). He had the leadership and enthusiasm that sparked the entire project, especially its emphasis on ecosystems and their accessibility by people. An emphasis on environmental quality led to the greenway theme, whereby nine principles were recommended to guide regeneration of the Toronto waterfront: green, clean, usable, diverse, open, accessible, connected, affordable, and attractive (Crombie, 1990).

Likewise, Mayor Gene Roberts in Chattanooga and Mayor Stephen Goldsmith in Indianapolis were instrumental in making their respective projects realities. Although he did not initially know a great deal about greenways, Mayor Roberts fully supported the effort by empowering those around him to make the project happen. Dave Crockett, on the Chattanooga City Council, also was instrumental as a leader with a vision and a compelling drive to move things along. Similarly, on the Fox River Project in Chicago, a key element to its implementation was one person, County Board Chairman Phil Elfstrom, who took on the project and became a "white knight" in the words of one interviewee. He made the project his personal project and campaign.

Elsewhere, a strong sense of public priority, over many decades, is a more notable factor than the leadership of one individual. Maryland and Minneapolis are good examples, although in very different ways. In Minneapolis there has been strong grass roots support for parks and open spaces for a very long time, but an unwillingness to coordinate at a regional level. According to our interviewees, strong leadership in the future could perhaps pull together a long history of open space protection and value into a coherent regional system. Meanwhile, people are not working in concert toward a regional open space vision because many think there is not a strong need for regional cooperation. That leadership is perhaps needed now, as the suburban and exurban communities proliferate in the Minneapolis/St. Paul region.

In Maryland's case, this leadership has long come from the state level. Maryland has historically been a top-down state regarding conservation, and has often left out public consultation. The state has more than a 20 year history of simply buying land through Program Open Space to hold for conservation. Although the state has not developed a strong grassroots support network, a number of land trusts help fill that leadership role. Maryland's 41 land trusts are instrumental in the work of greenway development and open space protection.

Project Participants — Who Got Involved?

Rarely, if ever, is the initiator of a greenways project the sole implementer. In order to realize projects of this size and complexity, a number of partnerships are inevitable and necessary at subsequent stages. The coalitions and partnerships that are formed are perhaps the strongest assets that predict completion of greenway corridors on the ground. A list of the project cooperators is long and complex for each city we examined and its accuracy depends on the definition of collaboration and participation. (Primary funders are discussed in another section, below). Some participants are active only in certain phases of the project; others are stable throughout a project's evolution. The collaborators in Table 5 are the key groups mentioned by our interviewees and found in the planning literature for each case study site. We are certain that many other organizations could be listed here; these are only the main actors.

Federal

As shown in Table 5, the NPS Rivers, Trails, and Conservation Assistance Program (RTCA) was involved in three of the projects we studied. Their role as "facilitators, brokers, networkers", as one RTCA staff person called it, is critical to many of these projects. Although RTCA personnel are typically not involved in implementation, they provide research, planning expertise, a process for public involvement, and other assistance. In Indianapolis, the RTCA staff produced the first draft of the greenway plan in a three week charrette. They set up parameters for hiring consultants to do public meetings and, through a cooperative agreement with Ball State University, worked with city and state officials in mapping with a Geographic Information System (GIS). The mayor's office was heavily behind the project, as indicated above, and a bond measure was approved for capital improvements including greenway development. In Chattanooga, RTCA coordinated the Southeast Tennessee River Valley Plan, a regional guide for greenway development that has not yet been adopted. Similarly, in Chicago, RTCA has been actively working with local organizations along the Chicago River.

In Minneapolis, the Mississippi National River and Recreation Area, administered by NPS, runs 72 miles through five counties in the Twin Cities metropolitan area. They have done extensive planning and coordination with local communities regarding greenway development along the Mississippi River.

State and Regional

State government agencies are almost always involved in greenway project development, either through planning or funding. In almost all cases the Departments of Natural Resources and Departments of Transportation play key roles. In Maryland, the state agencies are especially critical, since the program is run at that level. Regional governments are typically involved, where they exist at all. In Portland, Metro is responsible for a number of regional programs, but top priority is planning for future growth. Wise land use has become Metro's prime focus, due to a 1992 Metro charter that says growth management is its primary responsibility. Similarly, the Waterfront Regeneration Trust functions as a regional agency, even though it is authorized at a higher level. It works closely with Conservation Authorities, which are watershed, flood control and watershed management agencies, and with the municipalities.

Local

In most cases, the local unit of government is the most influential level in the planning and implementation of greenway systems. They serve an interesting role that varies across the cases. Again, in the smaller metropolitan areas, the city or county is the level at which these projects become reality. In others, the regional greenway system may encompass dozens of local jurisdictions, each implementing small, but critical portions of the plan. For instance, the Chicago system is complicated purely by the complex nature of coordination among 269 municipalities and over 150 park districts. In Chicago, the Forest Preserves have always had a strong local influence and have become the main implementers of the greenways plan. They are separate government units whose mission is to preserve open space, high quality natural areas, and provide recreation. Like Michigan, Illinois' home rule powers give virtually unlimited power to local towns, so cooperation and coordination are critical.

Non-Profit Groups

Non-profit groups are involved in all seven study sites and are critical partners in many cases. They are of two main types: natural resource advocacy groups and land acquisition groups. In Portland, the former have been helpful in the refinement process of identifying objectives and priorities, leading to the authority to buy land. Examples in Portland are Audubon Society, Friends of Forest Park, and Oregon Trout. Several of these groups joined together in the development and support of the master plan. In Portland, Friends and

Table 5. Primary Participant Groups

Chattanooga
- NPS Rivers, Trails and Conservation Assistance Program
- River Valley Partners
- Trust for Public Land and six local land trusts
- Chattanooga Area Regional Council of Governments
- Chattanooga Parks and Recreation Department
- Hamilton County Commission
- Chattanooga Greenways Task Force (citizen-led)
- Several private consulting firms
- Tennessee Valley Authority
- U.S. Forest Service
- Chattanooga/Hamilton County Regional Planning Commission
- U.S. Congressional delegation
- Lyndhurst Foundation
- Chattanooga Design Center
- Chattanooga Venture

Chicago
- Northeastern Illinois Planning Commission
- Openlands Project
- Local jurisdictions (260)
- Park Districts (150)
- Forest Preserve Districts (6)
- Friends of the Chicago River
- The Nature Conservancy
- NPS Rivers, Trails and Conservation Assistance Program
- Illinois Department of Natural Resources
- Illinois Department of Transportation
- Rails-to-Trails Conservancy
- University of Illinois

Indianapolis
- Indy Parks
- Indianapolis Department of Metropolitan Development
- Indiana Department of Natural Resources
- NPS Rivers, Trails and Conservation Assistance Program
- Indianapolis Metro Transportation Division
- White River Commission
- Ball State University
- US Army Corps of Engineers
- Several private consulting firms
- Local businesses
- Local Friends Groups
- Greenway Board

Maryland
- Maryland Department of Transportation
- Maryland Department of Natural Resources
- Maryland Historical Trust
- Maryland Department of Business and Economic Development
- The Nature Conservancy
- County governments (23)
- Trust for Public Land
- The Conservation Fund
- Rails-to-Trails Conservancy
- University of Maryland
- Maryland Office of Planning
- Maryland Environmental Trust and local land trusts
- National Park Service
- Local municipalities

Minneapolis
- NPS Mississippi National River and Recreation Area
- Metropolitan Parks and Open Space Commission (Metro Council)
- Minneapolis Parks Board
- University of Minnesota
- Trust for Public Land
- Minnesota Department of Natural Resources

Portland
- Metro
- Portland State University
- Trust for Public Land
- Oregon Land Conservation and Development Commission
- Friends and Advocates of Urban Natural Areas
- Local jurisdictions (29)
- Local parks providers (26)

Toronto
- Waterfront Regeneration Trust
- Lake Ontario Greenway Steering Committee
- Conservation Authorities
- Citizens and Friends groups
- Ministry of Transportation
- Ministry of Environment and Energy
- Province of Ontario
- Regional Municipalities (5)
- Local Municipalities (30)

Advocates of Urban Natural Areas (FAUNA) served to provide regional support to the effort. Many special interest groups have one special goal and act as an advocate for it. While there is an increasing number of these groups, they do not always work well with one another and there is often a sense of competition due to the scarcity of funding. The work of Chicago's Friends of the Chicago River is a noteworthy exception. This group was instrumental in addressing greenways as more than a means of connectivity, but as a way to reach multiple objectives.

The primary land acquisition groups for greenways, at the national level, are the Trust for Public Land (TPL), The Nature Conservancy (TNC) and The Conservation Fund (TCF). These groups are particularly important in implementation phases, because they are able to 'do land deals' and do them quickly, whereas it sometimes takes public agencies an unworkable amount of time. Many of our interviewees mentioned that these groups are crucial in the networking process with landowners, the business community, and the public. The Conservation Fund was instrumental in initiating greenway programs in Maryland and other regions. TCF buys both recreational and ecological lands, and subsequently makes gifts of property to public agencies. Likewise, TNC is a big player in Maryland, where it has four major focus areas and owns and manages a large amount of land. TNC buys land with special ecological values and often retains ownership or easements.

The Trust for Public Land is also heavily involved in greenway efforts and is an important partner in several case study areas. It has a particularly urban focus. For instance in Chattanooga, TPL was approached two years ago by the city of Chattanooga Parks and Recreation to help get Chattanooga's plan implemented. They have taken a leadership role in land protection for greenway corridors. In Minneapolis, TPL is in the process of developing a concept for a green corridor on the east side of the metropolitan area as a buffer zone. Other participants are the Land Stewardship Project (another non-profit group), the Farm Bureau and Washington County. They hope to receive funding from the Legislative Commission on Minnesota Resources, which is financed at the state level through gambling revenues. In Chicago, a real estate affiliate of Openlands Project has acquired the 20 mile Old Plank Road Trail and the six mile Burnham Greenway and transferred ownership to local governments once grants were received.

Smaller, local land trusts also have a large impact collectively. Of the 1095 land trusts registered with the national Land Trust Alliance, 72% list greenways as an area of activity. In addition, 64% are concerned with trail development, 59% with river corridors, 52% with floodplains, 36% with coastlines, and 36% with scenic roads (Land Trust Alliance, 1995).

Universities

The participation of the academic community is also apparent in a list of greenway implementers — for example in Indianapolis, Chicago, Portland and Minneapolis. The objectives at the Design Center for the American Urban Landscape at the University of Minnesota are to help decision makers in the phases prior to deciding on a specific project. This is done by getting physical design onto the economic and social agenda and by taking the greenway movement out of the parochial realm and into the development community. According to one respondent, The Design Center has inherited the Metro Council's role of coordinator, but without its budget, and the active discussion today regarding greenways in Minneapolis is largely a result of the Design Center's work. They have mapped the open space resources of the metropolitan region, clearly indicating where the resources are and how connections can be made. The Design Center essentially gave the public the vision that individual green pieces were so close and that they could be connected. Similarly, the research carried out by Ball State University, Portland State University, the University of Maryland, and the University of Illinois has furthered the goals of greenway projects in their respective states.

Private Consultants

Private consultants — landscape architects, planners and others — play an important role in greenway planning and implementation. The private sector brings different strengths to the process and partnerships between private and public often blend very well. This is especially true in the implementation phases, where consultants can help a municipality go from planning and public involvement to building greenways on the ground. They can sometimes relate to the Chambers of Commerce and corporate partners in basic business terms about the financial, social, and management sides of open space issues. Private firms, as 'outsiders,' can offer fresh, strategic advice that is often difficult to generate from 'inside' the project. While greenway issues can be quite complex for the local people who are immersed in it, a consultant can simplify problems and solutions. A typical mission for a private consultant is to evaluate strengths and weaknesses, and then to create assignments in a task oriented manner. They can also combine the many pieces which are not yet integrated, taking a concept and pulling it together into a feasible project.

Citizen Involvement

Each of the seven cities we studied has some level of citizen involvement. however, the extent of public participation varies dramatically. We were concerned specifically with processes that have been instituted for soliciting the general public's preferences and attitudes about the greenway projects. There is a difference between working with non-profit advocacy groups and other organized citizen's groups on the one hand and actively soliciting the opinions of the unorganized public on the other. Hoover (1995, p. 454) presents a useful goal for citizen involvement in greenway planning and implementation:

> *"Developing greenway policies in a participatory democracy context implies that opportunities for discourse must be found which encourage all relevant policy actors to participate in back-and-forth exchange of thoughts and ideas, to take the position of the 'other' such that they come to know one another's 'world' views and better understand the differing political cultures within which they function. Under those conditions, ordinary citizens may become policy-makers, and all who participate should feel they have a stake in the policy outcome. Stanley (1990) calls these special opportunities for discourse 'democratic forums', and describes discussions which leads citizens to a shared understanding of one another's political positions as 'civic conversation.' Accordingly, democratic forums and civic conversation are necessary components of coordinated policy outcomes such as greenways, where cooperation between several levels of government, and a wide variety of public organizations and landowners may be needed."*

Minneapolis

We found a number of methods by which this 'civic conversation' takes place in our seven case studies. In some cases, no formal process for public participation exists at the regional level, such as in Minneapolis. A loose grassroots support network seems to exist, but is active at the level of individual projects, cities and counties, without much participation around the idea of a regional system. The work of the Design Center for the American Urban Landscape has generated good discussions on a neighborhood by neighborhood basis.

Chicago

Similarly, the Northeastern Illinois Regional Greenways Plan in Chicago has not had a great deal of public participation in the planning and implementation of the regional system. Workshops were held in the planning phases, but these were more for decision makers and advocate groups than for the general public. On the other hand, the Friends of the Chicago River has collected a great deal of public input about the Chicago River, through a large survey of residents' attitudes, perceptions and uses of the river.

Photo: Larry Dick

Maryland

Like Minneapolis and Chicago, Maryland's greenway program covers a large geographical area, where public participation is perhaps better accomplished at a more local project-by-project scale. According to respondents in the Maryland Greenway Program, educational workshops are held as a means of communication and education. In addition, in an effort to determine the public's awareness of and attitude towards the greenways program, the commission undertook a public opinion poll. In spring 1995, 800 residents were interviewed by phone. Results showed that Maryland residents are aware of the rapid development taking place in the state and how it is affecting their surroundings and the state's natural resources. They feel strongly about preservation of natural areas and open space within their neighborhoods, and many would consider moving from their communities if existing open space were to be developed. They want to spend time outdoors and visit public lands on a regular basis, enjoy recreational trails, and many would like to bike or walk to work. According to the Director of Maryland Greenways, goals are to increase the private participation, to work more with rural populations, and to get the agricultural community involved.

Toronto

In Toronto, the decentralization of the public participation process has been institutionalized in a direct way. Municipalities are responsible for public involvement on a project-by-project basis and only receive funding from the Waterfront Regeneration Trust (WRT) if public participation occurs. According to informants at WRT, citizens' groups provide grassroots support through public meetings which are considered vital for the planning and implementation process. In addition, members of local non-governmental organizations serve on the WRT steering committee. WRT has an extensive education and citizen participation program, including promotion of waterfront places and events, a publishing program that prints interpretive guides, and cooperative education programs for youth and adults.

Portland

Portland's Metropolitan Greenspaces program has had organized citizens' involvement as part of its process from the beginning. Public involvement and education was particularly critical in the ultimate approval of the bond measure funding open space acquisition. The Friends and Advocates of Urban Natural Areas (FAUNA) is one of three arms that developed the program at its inception. (The other two were technical and political advisory groups.) FAUNA was made up of a large number of friends groups. Today, in place of and evolving from FAUNA, the Urban Streams Council keeps public involvement alive through a watershed approach and a more biological focus beyond the urban growth boundary.

Chattanooga

Both Chattanooga and Indianapolis benefited from the collaboration of the NPS Rivers, Trails, and Conservation Assistance Program and its public participation processes. In Chattanooga an extensive participation process reduced conflict in the implementation phases. Citizens groups were developed for each corridor, acting as advocates for each individual greenway. The city had previously been through an extensive process, Chattanooga's Vision 2000, which helped the public establish and achieve goals for the city. A 20 week series of visioning exercises drew 1700 people and generated thousands of ideas for a cleaner, greener, safer city. The greenways initiative built on those efforts because the public process facilitated the community's ability to implement change.

Indianapolis

In Indianapolis, public involvement was done with neighborhood associations through surveys. According to a National Park Service informant, the neighborhood associations contain local values. A series of workshops were held to talk about the plan when it was drafted, and corridor working groups (composed of landowners, merchants, and decision makers) subsequently kept the process going much farther.

Institutional Structures – How Are Participants Organized For Implementation?

Imagine that a greenways vision has been articulated for a particular metropolitan region. Then let's say a number of groups are involved in the effort, including the general public, governmental agencies, and non-governmental organizations. Given those important pieces, the region will still need a structure in which to work — an organizing method or institutional arrangement for implementation. This section discusses those structures for the seven case studies.

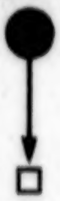
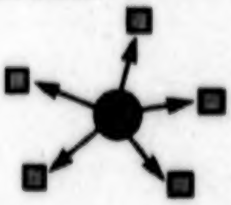
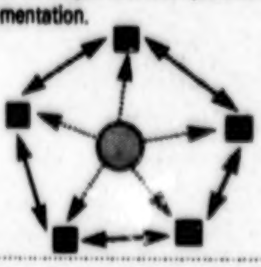
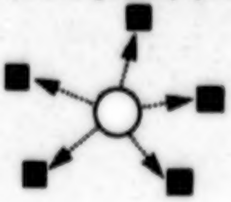
As in the other parameters of our study, there is wide variety in the way participants are organized for action. First, those cities with fairly simple (or no) structures for implementation are addressed — Chattanooga, Indianapolis, and Minneapolis. Following that, the more complex situations in Chicago, Maryland, Portland and Toronto are outlined. Figure 9 depicts four models of institutional relationships found among the seven cases. There is diversity in the amount of involvement and power that the umbrella organization holds, as well as the direction and intensity of interactions with local jurisdictions. The advantages and disadvantages of each configuration are outlined.

Chattanooga

In Chattanooga, the institutional structure for the RiverPark, the spine of the greenway through the city, is different from that of the larger regional greenway system. The RiverPark is much farther along, and has a sound organizational structure, as in Model 1. Following Chattanooga's extensive visioning process, a private non-profit group was formed called River City Company. It obtained $12 million in private funding to begin the creation of the RiverPark. Then in 1994 the name was changed to River Valley Partners, and supplementary funding was added from the city. Industrial recruiting was added as a mission of the group and it changed to a joint public/private organization for river revitalization and development.

The regional effort is definitely a grassroots movement,

Figure 9. Institutional Models for Implementation and Acquisition

Model	Example	Advantages	Disadvantages
1. Strong centralized agency directly influences projects within single (or few) jurisdictions. 	Indianapolis Chattanooga (part 1)	■ Unified ■ Direct control ■ Effective for smaller jurisdictions within a larger network ■ Strong leadership can be effective and visible ■ Good possibilities for citizen involvement in the broad vision	■ Potential difficulty in connecting to bordering jurisdictions or systems or for broader plans ■ May not leverage diverse sources of funding
2. Centralized entity serves as umbrella over multiple jurisdictions and has primary control over implementation. 	Maryland Portland Chattanooga (part 2)	■ Strong central leadership can coordinate multiple agency efforts ■ Stronger funding base from wider geographic area ■ Coordination of work across various geographic areas: Broader perspective and vision ■ Allows more progressive jurisdictions to proceed without (or ahead of) slower, more reluctant jurisdictions	■ Plan may not be a priority within each local jurisdiction ■ Potentially less grassroots support and public participation
3. Regional agency empowers jurisdictions through initial stages and then partners for implementation. 	Chicago Toronto Portland	■ Encourages coordination among jurisdictions ■ Increased power at the local level ■ Leadership can develop in local jurisdictions ■ Regional or state funding can be prioritized across entire project	■ Coordination may be optional between jurisdictions ■ Implementation may be slower with shared responsibility across many agencies
4. Subordinate regional agency acts as reference point for stronger jurisdictions to implement individual pieces of greenway system. 	Minneapolis Chicago	■ Grassroots efforts are done at a manageable scale over a long period of time ■ Ample room for private groups to put forth initiatives ■ Strong local control	■ No regional leadership for coordination ■ Shared regional vision is lacking ■ Lack of commitment by regional government is a barrier ■ Less ability to take advantage of funding possibilities in a holistic way for the network

Legend

○ Regional Agency

■ Local Jurisdiction/Corridor

⟶ Direction and strength of influence

Dominant Role ■
Moderate Role ▨
Minimal Role □

as shown in previous sections. Groups have been formed for each of five regional corridors. These groups, composed of citizens and non-profit organizations, act as advocates for the individual greenways. The Trust for Public Land provides oversight as a metropolitan coordinator, now employing Model 2. They have organized a Chattanooga Greenways Task Force that is representative of all five groups, coordinates the efforts of the five, and advises on funding allocation (elected officials control the purse strings). Originally this board was formed to identify and implement parks and open space in nearby suburbs where available land existed only along stream corridors. In Chattanooga, joint city and county planning helps bridge efforts toward a more regional system. The two units of government do not always see eye to eye but bringing them together over the greenways vision helps.

Indianapolis

The implementer of Indianapolis greenways is clearly the city, through Indy Parks as a municipal department. As shown in Model 1, it is the sole authority over environmental, recreational and aesthetic issues along the fourteen corridors identified in the Indy Greenways Master Plan. A citizen panel, the Indianapolis Greenways Development Committee, advises on policy, financing, lobbying state and federal government, public education, management and marketing. It is composed of city council members, mayor, parks board members and the director of the Indy Parks Greenways. The meetings are held once a month as a public forum open to all citizens.

Minneapolis

As described earlier, Minneapolis has no existing coalition to plan, much less implement, a regional greenway system. There is a reluctance to form partnerships within larger regional contexts, and a strong history of opposition to regional authority, planning and implementation, as diagrammed in Model 4. For instance, the Minneapolis Parks and Recreation Board is a separate parks system for the city, which has a strong sense of ownership over its own system. Those lands include the protected lands designed by Cleveland and Wirth for the Grand Round in the nineteenth century. Tight control and authority is maintained for that land. One interviewee expressed the opinion that ultimately a consortium of subcommittees (smaller than regional level) will get together and dematerialize the physical boundaries of the metropolitan region. In 1994-95, some momentum built for a regional greenways system. Groups involved at that time were the Trust for Public Land, Minnesota Department of Natural Resources, Minnesota Parks and Trails Association (which helps DNR buy park land on a smaller scale than TPL), Sierra Club, Audubon, Trout Unlimited, Minneapolis Parks and Recreation Board, Friends of Ramsey County, and Land Stewardship Project. However, this effort is now stalled, according to our sources.

It is important to note, though, that just because a regional greenways plan does not exist, this does not mean that greenways are not being created and protected in the Minneapolis region. They are just being done at a different scale, within cities and counties. For instance, in Hennepin County, Hennepin Community Works is a progressive program that incorporates infrastructure, transportation, and overall system needs into one vision. This innovative program was put together by a Parks and Public Works Commission made up of members from Hennepin County, the City of Minneapolis, Greater Minneapolis Area Chamber of Commerce, Minneapolis Park and Recreation Board, and other public and private partners. "Hennepin Community Works seeks to enhance how communities in Hennepin County work together to create good jobs, provide access to employment and build the long term value of communities by investing in infrastructure, public works, parks and the natural environment, and by improving the existing implementation systems" (Final Report of the Parks and Public Works Commission, 1994). Part of this vision is to strenthen communities through the types of connections that greenways provide.

Chicago

In Chicago, as elsewhere, we asked: "beyond the plan, is there a coordinating mechanism"? The answer is fairly straightforward in Chicago. There is no overarching powerful agency to implement the greenways plan and it relies heavily on the local jurisdictions to implement projects, with the State of Illinois primarily administering funds. However, several institutions are in place to assist this process. The Northeastern Illinois Planning Commission (NIPC) and Openlands Project are, for instance, important facilitators. In fact two full time staff people at Openlands Project are in charge of facilitating the greenways efforts. Aside from this assistance, the model being employed is a local one in terms of the 260 local governments, park districts and Forest Preserves taking charge of projects, as in Models 3 and 4.

Openlands Project strategically pursues and facilitates several greenway projects each year in order to implement the regional plan and in order to insure that greenway efforts stay active. Linked projects are being accomplished with this model. For instance, the Salt Creek Greenway, built in phases, is a connector trail that passes through 35 jurisdictions. The coordination effort for this project was enormous, as it involved property belonging to Forest Preserves, Park Districts and Cook county. Even with these successes, the lack of a regional implementation structure presents some problems. While there is a greenway priority list within the Greenway Plan, many of those projects listed as priorities have local issues that hold them up. In the meantime, other greenways are pursued, not necessarily according to a methodical ranking. Perhaps this incremental and non-linear process is inherent to regional greenway implementation, especially in a city as large as Chicago. It also speaks to the fact that while the plan was adopted at a regional level, the implementation is not. This may be due to the fact that NIPC is funded by the groups that it works for and responds directly to clients' requests-which may not be broad enough.

Recent bikeway workshops sponsored by NIPC help illustrate its facilitation role. NIPC brought together the Forest Preserves, Park Districts, and Highway Departments around the idea of non-motorized transportation corridors. All of these agencies are working to incorporate bicycle travel, but there is a fear that poor connections will be made without communication between agencies. According to one interviewee, only one county has a bikeway coordinator at this time.

The Illinois Prairie Trail Authority has the potential to provide a regional coordinating structure in the future, in terms of bikeways and other greenway issues. This is a non-revenue authority, created in 1987, and made up of Forest Preserves and conservation districts in the five counties around Cook county. The leadership was initially provided by a representative from Kane County, whose vision was a regional trail system. The Illinois Prairie Trail Authority is currently financing an update of the regional trails and greenways plan by NIPC and Openlands Project. According to our contacts, the Illinois Prairie Trail Authority could try to coordinate and facilitate trail development in the region, and could try to go after a revenue source to make this possible.

Initiatives along the Chicago River help illustrate another institutional arrangement for greenways in the Chicago region. These efforts are supported jointly by federal support in collaboration with a local non-profit group, separate from the NIPC/Openlands plan. The National Park Service worked with the Friends of the Chicago River to create a Chicago River enhancement plan. The discussions for this project began in 1988 and in 1992 NPS gave the Friends a small grant to conduct a study of the use and perceptions of the river. There was no coalition around the Chicago River as a greenway resource prior to this project. The Chicago River is an open space resource that touches all classes of people. Unfortunately, lower income groups are often kept from using the river and the goal of this project was to particularly target those communities. A survey was done by the University of Missouri identifying which recreation habitats people enjoyed the most. They discovered that neighborhoods that had access to the river were middle class, while adjacent to lower class neighborhoods the river was walled off, the resource was damaged, littered etc.

Implementation strategies of the Friends group included getting activity on the ground quickly in five or six projects ranging from 1-22 acres in size, and assessing resources to enhance them. By getting projects realized promptly, the project gained credibility. The goal of dealing with broader issues in implementing the project was enhanced by using the unskilled labor of urban youth. One of the best ideas of the Friends group was to educate people about the river, teaching them to see it as a resource by bringing them in contact with the river environment. One example of this is U'Can, an urban canoe program that targets inner city youth.

Maryland

Maryland's institutional structure is unique, given the location of the program at the state level. The greenway initiative came out of corridor thinking that Maryland has been doing for years. Linear corridors define this state — each one relates to a river or stream or to the Bay itself. Streamside protection laws have kept buildings out of floodplains, with strict control in each county.

While Maryland has been a progressive state in conservation and land protection, the Greenways Commission was created because of the feeling that despite these efforts, Maryland was continuing to lose open space. Much of the earlier land protection was site specific and piecemeal. For instance, a single parcel preserved in the midst of upcoming suburbs is in the end a failure. The pace of development is rapid in Maryland as Washington DC and its suburbs become less favorable places to live and people flock to surrounding states. For every one acre purchased and protected by the state there are three more being developed.

In the late 1980's Conservation Fund Chair Pat Noonan envisioned the state greenway program. Maryland had been spending billions of dollars on cleanup of the Chesapeake Bay, using federal money and losing ground because of non-point source pollution. In response, the idea was to approach the problem from a tributary strategy which coincided with the greenways concept. Governor William Donald Schaefer loved the idea, and in 1989 a commission was set up and members appointed by Governor Schaefer. The program was staffed by the Conservation Fund and co-chaired by personnel of the Departments of Natural Resources and Transportation. This was the beginning of a public and private partnership that formed the Maryland Greenways program, and eventually evolved into an operation of state government. The Commission set out to:

- ACT AS AN ADVOCATE OF INTERCONNECTING GREEN SPACE
- IMPROVE WATER QUALITY AS CONNECTED TO CHESAPEAKE BAY
- PROMOTE THE NOTION OF A GREEN INFRASTRUCTURE
- CONDUCT A GAP ANALYSIS OF STATE-OWNED LAND AND PRIORITY PURCHASES FOR THE FUTURE

The outgrowth of the commission's early work is the Maryland Greenways Atlas, which identifies corridors for protection state-wide. Counties are individually responsible for including greenways in their comprehensive plans, and accomplish this with the aid of greenway consultants. They also develop sensitive area plans. The Director of the Maryland greenways program works directly with liaisons from each county, either the Director of Parks or Planning and often both.

Some important goals have been accomplished. The Commission acts as a coordinating body to bring all agencies to the table and facilitate discussion over common goals. A series of workshops was conducted over the last five years, bringing together the heads of counties, parks department interests, land trusts and other key parties. Subsequently, decisions are being made which foster collaboration, especially between transportation and natural resource interests, for instance in the allocation of ISTEA moneys. In addition, the Maryland Greenways Commission is able to work across state lines to foster even bigger greenway networks. For instance, it collaborates with Virginia, Washington, D.C, Pennsylvania and West Virginia, working together on a greenway vision for the Potomac River watershed.

While the Greenways Commission has done some important collaborative work, it has not appreciably changed the top-down nature of conservation planning in Maryland, as shown in Model 2. The greenways program has not dramatically altered the way Program Open Space does business, in terms of buying sensitive lands. Some priority, however, is given to the connectivity that greenways, Rail-Trail projects and heritage corridors can provide. In addition a new division now exists in state government that is separate from the Greenways Commission, but responsible for doing technical assistance and large scale planning for parks and state projects. One of the program goals for fiscal year 1997-98 is to achieve greater citizen involvement.

Portland

Portland's Metropolitan Greenspaces Master Plan is a national model of cooperative planning involving more than 50 government agencies, many conservation organizations, businesses, "friends" groups, and interested citizens in Oregon and Washington. The structure of these planning groups was organized into three branches addressing the technical, political, and community issues of the greenways initiative. The names of these are: Greenspaces Technical Advisory Committee, Policy Advisory Committee (composed of local decision makers) and Friends and Advocates of Urban Natural Areas (FAUNA) which coordinated neighborhood and nonprofit groups. The Portland Audubon Society was instrumental in bringing FAUNA together. The final master plan contained results derived from the coordination of all three groups.

As a result, 22 of 24 cities within the boundaries of Metro and all four counties have passed resolutions of support for the Metropolitan Greenspaces Master Plan since 1990. Metro is the planning process coordinator and key implementer of the program. In some ways, Metro is a centralized entity which serves as an umbrella over multiple jurisdictions, as in Model 2. It has the authority to move the regional Urban Growth Boundary and implement certain planning and growth management measures on a region-wide basis. On the other hand, much of what Metro does is on a cooperative basis with local jurisdictions, as in Model 3.

Metro's goals are to coordinate the efforts of government and citizen groups to create a regional system, negotiate public access agreements, and own and operate some of the acquired lands. Of the regional trails and greenways system, Metro will coordinate planning, funding, acquisition, design, development, construction, operations, and maintenance of six targeted corridors. Subsequent to the passage of the 1995 bond measure, Metro has completed a refinement process through community workshops, stakeholder interviews, and other meetings with key landowners, friends groups, natural resource experts, and park planners. This was done for each of the 20 target areas to establish acquisition goals and objectives and specific geographic boundaries. Plans for all 20 refinement projects were adopted by the

Metro Council, authorizing the purchase of certain properties that meet the criteria, goals, and objectives.

Toronto

Like Chicago, Toronto's greenway system is planned at a regional level but is decentralized to local jurisdictions for implementation (Model 3). The greenways network is based on the Lake Ontario Greenways Strategy (LOGS), which was done through the cooperation of a steering committee of 60 people working with the Waterfront Regeneration Trust (WRT). The LOGS sets a broad conceptual framework for completion of the greenway, looking at both public and private initiatives. The responsibility for implementing the LOGS does not rest with any single agency. Rather, each of the agencies, municipalities, and groups with an interest in the waterfront reviews its own area of responsibility and actions to ensure that it is contributing in a positive way to achieving the vision and objectives of the Strategy.

The Waterfront Regeneration Trust is the coordinating mechanism. WRT was created by an act of the legislature in 1992 with a mission to foster regeneration of the Lake Ontario Waterfront from Burlington Bay to the Trent River. It reports to the legislature through the Minister of Municipal Affairs and Housing. While the organization has no power or authority to set policy, it does have the ability to hold land, and to generate and retain revenues. The mission of the WRT is to look at the interface of land and water and to support watershed groups that are conducting land-use initiatives inland. It acts as a facilitator to bring parties together, develop agreements on waterfront objectives, coordinate funding proposals, report on progress and challenges, and promote appropriate conservation and use of the waterfront.

Working with Greenways Advisory Committees in separate geographic areas, WRT helps organize schedules, priorities, and deadlines. These project teams include representatives from the private sector, community groups, educational institutions, and all levels of government and non-governmental groups as a way to achieve a broad-based consensus. At the same time, federal and provincial agencies, conservation authorities, and municipalities are encouraged to incorporate the LOGS into their planning, regulation, and other activities. The academic community is asked to assist in the research and monitoring.

LOGS implementation is based on mechanisms that are already available in three categories: 1) planning and regulatory mechanisms including environmental impact assessments, waterfront legislation, watershed strategies and plans, remedial action plans and integrated shoreline management plans, 2) stewardship including management of public land, land acquisition by public agencies, and landowner contact, and 3) funding and incentives including coordinating plans and projects with funding opportunities, directing economic incentives, and attracting private funds to waterfront projects. The plan outlines a two-tiered implementation strategy based on arterial greenways along major geographic features and local connectors within each community.

Summary of Institutional Structures

Table 6 is a summary of regional coordination for the seven regions. Several models emerge. First, in the cases of Chattanooga and Indianapolis, advisory boards of citizens and non-profit representatives help guide a city agency which has the authority and commitment to implement a greenway project. Second, the Maryland Greenways Commission is a more powerful group at the state level with the authority to prioritize and purchase land for a state-wide network.

Third, Portland, Chicago and Toronto rely on regional organizations for coordination, although in different ways. Portland's elected Metro Council has the power to implement projects, primarily through land acquisition, while Toronto's Waterfront Regeneration Trust is a facilitator and coordinator for jurisdictions who implement the plan. Chicago's Northeastern Illinois Planning Commission functions similar to the latter. Fourth, in Minneapolis, a regional boards exists, but has not been active in either planning or implementation of a greenway system.

Funding

There are a number of models for funding greenway projects. At the same time, there are some consistent sources that are used throughout the country, such as the Intermodal Surface Transportation Efficiency Act (ISTEA) funds, as shown in Table 7. However, some of our respondents emphasized that ISTEA is not necessarily the answer to be relied on too heavily. It has strings attached and may not be the make or break facilitator that it is often made out to be. In financing greenways, all available financial partnerships need to be looked at and the more diverse the sources of funding the better. The other federal funding source widely used is, of course, the National Park Service through its RTCA program, which was involved in Chattanooga, Chicago and Indianapolis.

As shown, most programs also use state/provincial and local funds. Two of the seven sites, Minneapolis

Table 6. Regional Coordination Boards

City/Region	Regional Coordinating Body	Authority	Composition	Unique Coordination Tasks
Chattanooga	Chattanooga Greenways Task Force	Advisory and funding recommends project (through Trust for Public Land)	Citizens and representatives of non-profit organizations	Coordinate between city and county, and across state line to Georgia
Chicago	Northeastern Illinois Planning Commission	Planning and advisory agency	Planning agency funded by participating gov't units	Coordinate 260 municipalities, 150 Park Districts and 6 Forest Preserves
	Openlands Project	Non-profit land protection group	2 full time staff coordinating greenways	
Indianapolis	Indianapolis Greenways Development Committee	Advisory	16 members + chair: Citizen panel	Coordination with other towns in Marion County and corridors crossing to other counties
Maryland	Maryland Greenways Commission (within MDNR and MDOT)	Coordinate planning, funding and implementation of greenways across political boundaries	28 members: Governor appointed One liason to the Commission designated by each county	State-wide coordination
Minneapolis	Metropolitan Council	Park planning and implementation; no regional greenways plan	16 members + chair: Governor appointed	Strong local history of opposition to regional authority, planning and implementation
Portland	Metro Council	Governs project implementation, including expenditures of public funds	7 members, elected by district. 1 executive officer and auditor elected at large	Coordination across state line to Washington State
Toronto	Waterfront Regeneration Trust	Facilitator and developer of agreements on waterfront objectives	28 members: Elected, plus 6 municipal mayors	Coordinate inter-governmental cooperation

and Portland, have regional government agencies which fund greenways. Foundations also play a critical role. Several foundations have supported greenways in these cities. In addition, other non-governmental organizations play key roles in funding and real estate transactions, for instance where TPL or TNC facilitate land purchases. In Chicago, Openlands Project is funded privately and can act rapidly on the purchase of land and easements (and act as a holding agency for the land while the state raises support). Groups like this also have the ability to reach the segment of the population with anti-government sentiments.

Table 7 also indicates what agencies administer funds once they are acquired. Funds are administered by local jurisdictions in several cases: Indianapolis, Minneapolis and Chattanooga. In two regions, Portland and Toronto, administration of funding is done by a regional entity, using established criteria for how, when and where money is allocated. Administration at the state level is important in Maryland through the Maryland Greenways Commission and in the Chicago region through the Illinois Department of Natural Resources.

Chattanooga

Chattanooga's RiverPark has received funding from private and public sources. Strong foundation support from the Lyndhurst and Tonya Foundations has supplemented ISTEA funds and other federal and state sources. Project funding began with a $3 million challenge grant from the foundation, where it donated $1 for every $2 of public and private contributions. So far, a million dollars of Lyndhurst funding has been dedicated.

The Tennessee Valley Authority has also funded greenway development, and private corporations have dedicated easements for greenway segments. Beyond the RiverPark segment, funding is less certain for the larger greenway network. The Trust for Public Land is overseeing the financial aspects of the larger system, also expected to come from the joint city/county government and private foundations. At this time, there is no dedicated funding for the greenway system and TPL is trying to create that financial base. Tax revenues from the City Parks Department are being used for planning the other segments, but only one other corridor has a specific plan at this point.

Chicago

According to our interviewees in Chicago, the most difficult yet most successful part of the greenway funding process has been ensuring ISTEA funds annually for the past six years. ISTEA and state programs contribute major funding; approximately $40 million has been committed in three rounds, which will build 17-20% of the proposed trail system in the next few years. At the same time, the Congestion Management and Air Quality program has funded some projects. Support from the state is critical. The Department of Natural Resources is very supportive of the Northeastern Illinois Greenways Plan and has provided funding for stream protection measures which ISTEA would not fund. The state is now seeing the importance of greenways and is focusing grants not just on ballfields but rather towards connected networks. To this end, a greenway project will rate higher in their evaluation system than will ordinary park development and thus will receive priority funding.

State funding occurs on a case-by-case basis that the DNR administers via three programs : Bike Program, Land and Water Conservation Fund (LAWCON), and Open Space Land Acquisition Development (OSLAD). The DNR uses the regional greenways plan a great deal to determine which projects it should fund, for instance funding projects that will link landscapes within the overall greenway plan. To supplement these sources for open space financing, several of the counties have actually created their own foundations, for instance in DuPage County where this effort was fostered by the Forest Preserve. Other private funding has been

Table 7. Funding sources and administering bodies for seven case study regions*

Greenway	Private	Public				Administered by
	Foundation/Corp./Other	Federal	State/Provence	Regional	Local	
Chattanooga	Foundation	ISTEA, NPS, TVA			Park dept	City/county level;
Chicago	Foundation, Private Fundraising	ISTEA, NPS	DNR, DOT			State DNR
Indianapolis	Foundation	ISTEA, NPS	DNR		Local loans, city dept of public works	City parks department
Maryland	Land Trusts	ISTEA	Program Open Space		County level	State Greenways Program
Minneapolis	Foundation	ISTEA, NPS	Legislative Comm. for Minnesota Resources	Metro Council	City and county, parks and recreation departments	Local jurisdictions
Portland	Private Fundraising	ISTEA, FWS		Bond Measure		Metro
Toronto		Canadian Federal	Jobs Ontario, Waterfront Regeneration Trust			Waterfront Regeneration Trust

*This table reflects only the main sources of funding to date. Other sources may have been acquired, but the ones shown are those that were identified as critical to the implementation of greenway plans.

obtained from the MacArthur Foundation and the Conservation Fund.

The work of the Friends of the Chicago River has been subsidized heavily by small grants from the Urban Resources Partnership, a federally funded program that brings together multiple interests for urban revitalization. This initiative was spurred by Congressman Sidney Yates from Illinois. Subsequently, a $1.5 million special congressional appropriation forced a partnership between federal agencies for coordinating on river projects in the Chicago metropolitan area.

Maryland

Maryland's General Assembly established its commitment to land preservation and the provision of outdoor recreation in 1969 through the enactment of Program Open Space (POS). A state transfer tax of .5% of the consideration paid for real property transactions would serve as the primary source of funding for POS. Revenue received from this tax has been used for POS, Heritage Conservation Fund, Agricultural Land Preservation, and the General Fund of the state. Attempting to keep pace with development, state transfer tax funding for conservation programs has increased from approximately $19 million in FY 1970 to $58 million in FY 1996.

In FY 1996 the portion of the state transfer tax revenue used for conservation was distributed in the following manner: 41.7% to POS Department of Natural Resources, 41.75% to POS county grants, 2% to POS Natural Heritage, and 14.5% to Agricultural Land Preservation. The county grant funds are allocated to Maryland's 23 counties and Baltimore City by formula considering county population, transfer tax receipts, and prior allocation amounts. POS provides 100% of the funding to buy needed land for state, county, and city parks and provides 75% of development costs for county and city park and recreation areas. Of its 23 counties, the majority of Maryland's population lives in only three. Besides POS (which also administers the federal Land and Water Conservation Fund grants), ISTEA is the only other major source of greenway funding. POS monies are used as the 50% match in leveraging ISTEA funds. Of the ISTEA funding acquired in Maryland, 78% has gone toward greenway projects.

Although Maryland has financing to purchase land (or rights in land) for greenway development, this money is slow to arrive; it takes about a year to purchase land through the program (if all goes well), and many landowners cannot wait that long. Therefore land trusts are increasingly important to Maryland's greenway implementation. The Trust for Public Land does many of the real estate transactions that are eventually funded 100% from POS. It is a useful partnership; the funding source is available from the state and TPL does the actual transaction. Maryland has also been a leader in alternative methods of land preservation and the funding therein. Calvert County has developed a model of progressive land-use planning methods, where county revolving loans are being set up for Purchase of Development Rights and Transfer of Development Rights programs.

Minneapolis

Funding is not perceived by our Minneapolis interviewees as the limiting factor to regional greenway development. Money seems to be more available than is coordination. For instance the state legislature is regularly allocating money to Metro Council to buy parks. But the big vision is missing to fully take advantage of those possibilities for a linked network. The Legislative Commission on Minnesota Resources (LCMR) has funded work along the Mississippi River and elsewhere in the Minneapolis area. Its revenues come from lotto and cigarette taxes, similar to Land and Water Conservation Funds. Funding is also available through the Mississippi National River and Recreation Area if municipalities along the river comply with NPS river management objectives. This assistance is available for greenways, restoration, and other projects.

Toronto

In Toronto, $33 million has been invested in the last three years for trails, habitats and marinas. This money has come from a previous program called Jobs Ontario which provided $11 million and was matched with monetary and in-kind support. Funding has not come from private sources to any great extent and WRT wants to diversify those sources more in the future, especially since the new Canadian administration allocates fewer dollars for greenways.

Indianapolis

Indianapolis has raised $8.9 million through a wide variety of funding sources including general obligation bonding, private corporations (Eli Lily Foundation), Department of Public Works, a cumulative building fund (which allots $1.5 million/year over the next 10 years to build trails), ISTEA, and a non-profit Greenways Trails Foundation which raised money to maintain the trails. In-kind services through the state of Indiana and the NPS have also been helpful. Land and Water Conservation Funds have been allocated through Indiana DNR.

Portland

The financing of greenways and open spaces in the Portland metropolitan region was jump-started by federal dollars in 1991. At that time, Senator Hatfield secured $500,000 per year through the Fish and Wildlife Service (today that amount is $200,000/year). The initial $500,000 was the key to building and increasing awareness within the public about open space protection. The money was used for environmental education and habitat restoration activities. In the opinions of some, the $135.6 million bond measure of 1995 only passed because of this initial funding and its educational impact. The successful bond measure was the result of several years worth of work and simply spreading the word to the Portland metropolitan population. The first bond measure for $200 million, which failed in 1992, was not specific enough about what the people were getting for their tax dollars.

In 1995 the "Campaign to Protect Open Space, Parks and Streams" was successful. There was a broader base of support, for example among the development community, and greater specificity about the exact natural areas and greenways needed for the region. Of the $135.6 million, $25 million goes to local park providers to finance local projects in the three counties, 21 cities and two park districts. Ninety one projects are included in this part of the project for local jurisdictions to create their own projects, from community gardens to wild land protection. In addition, fourteen regional areas are identified for protection and six greenway trails, for a total of 111 sites scheduled for acquisition or improvement. It is estimated that of the 111 sites, one of them is within five minutes of each household in the region.

The Metro Council's purchase of land for the 14+6 regional projects aims to be competitive in the private market. Metro is a cash buyer. It will not have contingencies of re-zoning or other complications to overcome before buying land. 'Due Diligence' is the only thing necessary before purchases can be completed (including title searches, appraisals, environmental studies, etc). The important point here is that Metro is situated to do land deals and to do them quickly; the money is waiting to be used. The program also allows the purchase of easements, or water or timber rights in land.

Summary of Funding

In summary, attitudes toward funding differ across cases, as does the availability of funding. However, just because one region has more funding available does not necessarily ensure a regional system's successful coordination. Likewise, a lack of money does not necessarily predict that a greenway system is not feasible. According to Wink Hastings at RTCA, "Don't worry about funding, make a plan and then implement the easy part of it, stepping around the tougher issues."

William Morrish at the Design Center for the American Urban Landscape (the Design Center is funded partly by Dayton-Hudson) critiqued the way greenways are funded under cities' capital budgets. According to Professor Morrish, greenways are capital improvements that "need to be funded as a row and not a column." In other words, the issue cuts across various spatial and social issues that a city is dealing with in financing, planning and decision-making — from neighborhood revitalization, to connectivity, to security, to development, and elsewhere. This approach encourages a less parochial and more integrative approach in greenways, both in funding and in initial planning.

Policy and Legislative Environment

A number of political and regulatory factors are important for the completion of greenway networks. First, the adoption of the greenway plan itself is an important step. A more thorough study would need to be done to develop a cause and effect relationship, in terms of the impact of legal adoption on implementation success. In some cases, as shown at right, the plan is adopted into legal frameworks and in other cases it serves as a regional guideline or framework. For instance, in Indianapolis the plan has been adopted by the Parks Board and Zoning Board and incorporated into the county-wide Comprehensive Land Use Plan.

Sites with adopted plans
Indianapolis
Chicago
Maryland

Sites with plan as a regional guideline or framework
Portland
Chattanooga
Toronto

Sites without a plan
Minneapolis

In Chicago, the Northeastern Illinois Planning Commission is an advisory planning agency and adoption of their plans by local jurisdictions constitutes policy decisions. A non-regulatory perspective is taken in several cases. In Chattanooga, the plan is only a guideline at this point. In Toronto, the overall Lake Ontario Greenway Strategy is not adopted in any legislative way. However, municipal plans incorporate the greenway into each of their planning and policy structures.

Other legal factors can help or hinder the implementation of a greenway system. Of the cases we studied, Portland's example is probably most comprehensive, in terms of a greenway initiative being strongly tied to other plans for growth management and land-use planning. The Region 2040 growth concept, looking 50 years into the future, is the guiding document. The planning process will result in the Regional Framework

Plan in 1997 that will set regional land-use policy. The plan will address the integration of land use, transportation, water, and open spaces. The Metropolitan Greenspaces Master Plan is tied very closely to the long-term plan and complements the Urban Growth Boundary in place in the metropolitan Portland area.

Other cities have complementary legislation in place or being developed to enhance or complement greenway networks. For instance, in Chicago a regional transportation plan is being developed that includes bicycle travel, at least on a policy basis. No detailed bikeway system has been designed as yet. In Maryland, there is a long history of careful land use policy prior to the contemporary greenways movement. As in Oregon, there is a state-wide growth management law that mandates county land-use planning, whereby each plan submitted for approval must include protection of natural resources. A heritage bill is being considered in the state, which would further complement greenway objectives, in terms of historic interests. In addition, a state-wide Forest Conservation Act demands that every development of 100 acres or more have a forest conservation plan. In Toronto there is general legislation at the provincial level that helps the greenway movement, for instance in Provincial planning acts regarding the environment, but the current government is weakening those environmental and planning priorities.

Ownership and Management

In the cases we studied, many of the greenways are owned and managed at the local level through parks departments and other city and county government agencies, as shown in Table 8. This is true in Minneapolis, where the system is inherently decentralized and greenway segments are owned and managed by city and county governments. In Indianapolis, Indy Parks manages all of the greenway network and most of the land is in city ownership, with some in private ownership, (with easements for city use and maintenance). The maintenance of some Indianapolis corridors has been adopted by various groups, including Boy Scout troops and church groups. Safety along the trails has been addressed by hiring 13 deputies as full-time Park Rangers, some of whom monitor safety along the trails by bike patrol. Chicago's greenway system has an infrastructure in place for ownership and management of greenways through its 150 Park Districts and six Forest Preserves.

A mixture of ownership and management is found in Chattanooga, Maryland, Portland and Toronto. In these cases, the eventual management of these lands seems to be more complicated and somewhat uncertain. In Portland, for example, the twenty regional parks and trails that are to be acquired by Metro through Portland Greenspaces will not be managed by Metro necessarily, but by local jurisdictions or non-government organizations. Some creative cooperative agreements will be needed in these cases. In Chattanooga, greenway segments are (will be) owned primarily by local jurisdictions with some ownership by land trusts, the State of Tennessee and the Tennessee Valley Authority. Management, as in most cases, is done by the respective owners.

Similarly, in Maryland's greenway program, most of the greenways involve a variety of owners and combination of public access areas, private parcels and areas of restricted access. Of Maryland's six million acres, the state owns and manages over 300,000 acres. County park systems are, of course, managed by the counties and many greenspace buffers by private citizens. Many of the counties do not have the resources to monitor all of the properties acquired through the greenways program. The Director of the Maryland Greenways program advocates regional management authorities to alleviate these concerns. In some cases, initial funding for greenway acquisition is not authorized when it becomes apparent that management issues are not resolved at the outset.

The Waterfront Regeneration Trust in Toronto has created some unique scenarios that link ownership and management for multiple benefits. Sometimes agreements are made with private industries for a waterfront trail easement, whereby a municipality maintains the trail, but industry provides the land. These are truly public-private partnerships that help solve competing financial demands of land ownership and land management.

Conflicts and Barriers to Greenway Implementation

A minor amount of opposition to the greenway initiatives was reported by all of the interviewees. Several respondents, for instance from Portland and Chattanooga, attributed a phenomenal acceptance of the greenway concept to very early public involvement and education. Similarly, in Indianapolis, there is a good deal of community buy-in and acceptance. As in most places, there was an element of NIMBY sentiment in Indianapolis, but because citizens were involved in the process, it was not severe. A similar trend was seen across all cases — some level of opposition was found prior to greenway implementation but after the greenways were in place and people saw the positive results and benefits, there was greater acceptance for future projects. According to one greenway expert, potential conflicts are often avoided by not 'pushing' reluctant citizens and landowners. For example, in Chattanooga, when a group or neighborhood expressed considerable concern, that area was delayed while other areas were pursued.

In some cases opposing factions are not necessarily against the idea of a greenway, but want money appropriated differently. Therefore, ISTEA funds are particularly valuable since they are designated specifically for greenways and other non-motorized transportation projects. In Portland, other sources of friction came from the business community, where a "what's in it for me" attitude tended to prevail until business leaders became convinced of the benefits of the open space program. Oregonians had concerns about taking land off of the tax rolls, due to public acquisition. However, these effects will supposedly be offset by the increase in property values near the new parks and greenways. Beyond that, in all seven cases, conflicts arose when property rights were perceived to be threatened. In addition, respondents in Toronto and Maryland pointed out the conflicting objectives and values of recreation and nature preservation, leading to conflicting project goals.

Although greenways do not always include trails, when they do controversy is likely. Trails are often contentious. As one interviewee put it, trails represent "....lines on a map that can cause people to freak out." Rural residents are often opposed to urban people using trails in their areas because of the fear of crime and other negative effects. This issue was mentioned in reference to the greenway systems in Chicago, Minneapolis and Maryland.

As other studies have shown, there is often the need for rural populations impacted by greenways to understand their benefits. In Chicago, according to one interviewee, the power of positive information was demonstrated when a rail corridor proposal resulted in a positive and supportive public hearing, where a negative reaction was anticipated as crowds gathered before the meeting. In another Northeastern Illinois example — the Fox River Trail near Elgin and Geneva, Illinois — many of the local residents were originally opposed to the project, but have now come to embrace it. The waterfront area has been significantly enhanced since the trail implementation. Several respondents emphasized that if project planners can contact landowners before they feel threatened, then the process evolves more smoothly. Several studies have documented the positive citizen and landowner perceptions of greenways that have been implemented (Moore et al., 1992; National Park Service, 1991).

Table 8. Ownership and management entities for seven case study regions

City/Region	Ownership	Management
Chattanooga	Mainly city and county, with some ownership by land trusts, state, and Tennessee Valley Authority	Whoever owns the parcel
Chicago	Park Districts, Forest Preserves, and municipalities	Park Districts, Forest Preserves, and municipalities
Indianapolis	City government mostly; some private ownership with easement donations	Indy Parks
Maryland	Varies between federal, state, local governments and private organizations	Cooperative agreements among several groups are forged. Sometimes 'adopted' by citizen groups
Minneapolis	Cities and counties	Cities and counties
Portland	Municipalities for local greenways. Metro owns regional greenways.	Municipalities for local greenways. Municipalities, Metro, or non-governmental organizations to manage regional greenways.
Toronto	Conservation authorities and other public agencies, usually municipal. Some industrial ownership.	Municipalities

What are the key patterns that emerge from the seven case study examples? This chapter summarizes these patterns around three interrelated themes — key ingredients, challenges and strategic trends. First, it is useful to ponder why public ideas are so difficult to implement. Quayle (1995) presents a number of road-blocks to getting things done, from her experience with the Vancouver, British Columbia greenway project. These include a culture of conformity and compliance, the political and bureaucratic fear of change and the unknown, a lack of a sustainable vision for the city and visual, social and ecological illiteracy. She emphasizes that implementing ideas in the city requires hurdling, avoiding or breaking these road blocks through a number of strategies: 1) reviving citizenship, 2) building partnerships, 3) making big moves, 4) making small moves and trial offerings, 5) modelling after nature and beauty, and 6) educating for community-based literacy. In our interviews, we found that greenway advocates and planners were mindful of some of the same themes in implementation success, as detailed below.

Discussion

Key Ingredients: What does it take?

Commitment and Leadership

There is, of course, no cookie cutter approach that can ensure the success of a greenway system, nor would we want one. However, there are some common ingredients in the cookie dough: commitment, grassroots support, strong leadership, a plan of action, education and...yes, money! According to our interviewees, the biggest factor seems to be commitment, not money. The people we spoke with talked at length about commitments affiliated with their respective projects — by public agencies, friends groups, and influential individuals.

Grassroots support is the hallmark of the greenways movement. However, citizens' commitment is not enough. Physical implementation is a hybrid of grassroots and 'higher' support. Elected officials must join in to deliver the physical reality of a greenway system. Beyond that, the determination and motivation of a leader is critical; local organizers need to bring in key political leaders and continue to demonstrate the leadership throughout the life of the project. This leadership can then provide the structure for people to quickly and creatively make the greenway vision become reality. Out of that commitment by various individuals and groups, another important ingredient emerges — a plan of action agreed upon by these various parties.

Education and Public Participation

Education and involvement of the public seems to be one of the most successful tools for greenway implementation. It generates public commitment and helps minimize reactionary opposition. Several of the cities we studied relied heavily on education as a means of getting projects accepted and funded. In Portland, by educating the public about the benefits of protecting resources, the region was able to rally support for public funding. And in Chattanooga, educating and involving the people about the public process ultimately resulted in successful greenway implementation, among other benefits. It is important to recognize that these projects take a long time to complete. Therefore, patience becomes another asset. Quayle (1995) puts it well in her article on implementation politics in Vancouver, British Columbia. "The process has indicated the need for poking and prodding, nudging and needling until the ideas are implemented."

Challenges

Cooperation

Regardless of the institutional structure or the size of the greenway vision, lack of coordination among agencies and organizations seems to be the biggest impediment to effective and timely implementation. In many cases, just getting different departments and personnel within the same city or county to work together is an enormous challenge. An anecdote that one respondent used helps illustrate this phenomenon. Plans were being presented by two different departments at a city hearing on the same day, neither aware of the other. One plan was for storm water retention and the other for a greenway and both dealt with the same geographic area. These groups obviously had mutually beneficial concerns, yet were not communicating in a unified way.

Regional Governance Simultaneous With Local Scale Work

In many places, the lack of a regional governance structure seems to be an enormous barrier. A regional greenway network needs, by definition, a real commitment to regional planning and, in many cases, to growth management. Where these priorities do not exist, greenway networks are more difficult. Furthermore, low public understanding of ecological values and development issues exacerbates the challenge. This is where the educational objective becomes critical, as promoted above.

In addition, the large size of metropolitan greenway systems is a challenge in terms of public awareness and understanding. By and large, the general public has trouble visualizing an abstract land-use or geographic idea at a metropolitan scale. Breaking projects down into manageable and 'imaginable' pieces helps. Defining specific corridors or local resources can help people get invested in a bigger vision. Several of the seven cities have done just that: Portland identified 14 target natural areas and 6 trails and greenways projects in order to provide citizens an opportunity to see potential investments; Indianapolis broke its network into 14 specific corridors; Chattanooga's program is organized around 7 corridors, and Toronto divided the waterfront into 14 landscape units. Subsequently, identifying greenway priorities at the small-scale, local level is a logical follow-up. For instance, some planners have found that helping local jurisdictions develop 'feeder' trails is the key to getting them interested in regional trail systems. Officials' first concern is providing better local non-motorized transportation for their own citizens. They often need to see those local possibilities before buying into larger visions.

Financing

Funding is always a challenge, although not necessarily the primary one. Our research shows that diverse funding sources are preferable and that money follows good ideas. In its query of officials in charge of successful conservation programs, the Trust for Public Land compiled the following advice on funding (GreenSense, Autumn 1995) and each point is relevant here:

- POSITION THE PROGRAM AS BIPARTISAN AND NON-PARTISAN - TRANSCEND PARTY AFFILIATIONS. (A STRATEGY USED SUCCESSFULLY IN PORTLAND.)
- RESPOND TO LEGITIMATE CONCERNS. (IN MARYLAND, THE BOARD OF REALTORS CEO SUCCESSFULLY ARGUED FOR AN EXEMPTION FOR FIRST-TIME HOMEBUYERS FROM THE STATE'S REAL ESTATE TRANSFER TAX, THE LUCRATIVE FUNDING SOURCE FOR PROGRAM OPEN SPACE.)
- BE ACCOUNTABLE; SHOW SOLID FACTS ABOUT ACCOMPLISHMENTS AND SAY HOW YOU WILL SPEND THE MONEY. THEN REPORT HOW YOU SPENT IT. (ANOTHER CRITICAL FACTOR IN PORTLAND'S SUCCESS STORY.)
- CHOOSE PROJECTS THAT LEVERAGE PUBLIC FUNDS. DEMONSTRATED USE OF PUBLIC DOLLARS AS SEED MONEY TO GROW PARTNERSHIPS IS APPEALING IN TODAY'S CLIMATE OF CAREFUL SPENDING.
- INVOLVE WILLING SELLERS. PRIVATE LAND CONSERVATION GROUPS PLAY CRITICAL INTERMEDIARY ROLES IN WORKING OUT WIN-WIN ARRANGEMENTS.
- NURTURE STRONG COALITIONS. FIND AND KEEP FRIENDS.

Strategic Trends

Public-Private Partnerships

Everywhere one looks in the arena of civic life, the idea of public-private partnerships for problem-solving is promoted and practiced. Greenways are no different and, in fact, thrive on a mix of involvement by both public agencies and private partners. Especially as the positive economic impacts of open space protection and development become clear, the private world is inclined to cooperate and participate in greenway developments. A consistent theme among the professionals interviewed for this report was that the future of the greenway movement is in working more closely with the development industry, with the corporate world, and with the private philanthropic community. In some cases, a lack of coordination with the building and development world has disadvantaged greenway efforts.

Multiple Objectives

The future of the greenway movement depends, it seems, on an expansion of objectives and integration with other social and ecological issues. More and more, the multiple benefits of greenways are being promoted and advertised. At the same time, much of the fuel behind greenway efforts has historically come from the parks and recreation fields. This is changing. In the cases we studied, a prominent theme was integration, exhibited in two main ways — socially and ecologically. First, some of the most exciting greenway efforts have a socially responsive purpose. In fact, they are being implemented because of the positive effects on disadvantaged populations through neighborhood revitalization, employment opportunities, educational programs, and involvement of urban youth. In the opinion of one respondent, the key factor to the success of Chattanooga's project was the focus on social and cultural revitalization — an area of high community interest. Through this effort, citizens learned of empowerment in civic life.

Secondly, the multiple objectives of land-use planning and growth management are increasingly important stimuli for greenway development. Part of the challenge in this regard is the perennial issue of defining greenways. Much of the restoration work, both in and outside urban areas, is broader than greenways themselves. According to one of our respondents, the parochial parks and recreation focus of the greenway movement is part of the problem. He tries to achieve more than one result per greenway project, so that when people ask about greenways they will automatically assume that other issues have been dealt with in the process, such as habitat protection and water quality. The efforts of Hennepin Community Works in the Minneapolis region is a wonderful example of this type of approach.

Having these other objectives front and center in the greenway planning process is vitally important. Portland demonstrated this by tying their open space program to the issue of growth management and the protection of natural habitat. And in Toronto, natural features and bioregions have motivated the greenway vision. The linkage of greenway planning to other watershed planning issues is becoming more widespread, although rarely implemented along those lines, due to jurisdictional boundaries. One respondent in Chicago stated that a watershed approach has been implicit in their process, but not so much at the plan's inception. In the last three or four years, their awareness of urban watersheds has been elevated (via storm water management plans), but this awareness is not yet tied to smaller scale greenway plans. He called this the 'new frontier' for urban greenway planning. Natural feature protection and restoration will, like the restoration of neighborhoods and jobs, be central to successful implementation strategies for urban greenways.

Directions for Future Research

There are a number of directions that this research could take in order to expand on what is shown here. First, it would be useful to gain a better depth of understanding about the seven metropolitan regions that are the focus of this study. In particular, this study suffered somewhat from a lack of first hand experience in the various cities and individual greenway sites. Site visits would give more substance and depth to the analysis, especially by focusing more closely on specific factors — for instance financing or management. It would also be useful to take a temporal approach, by looking at the continued evolution of these projects into the future. For instance, for these seven cities, does the greenway vision last? Is their momentum for implementation sustainable? What are the outcomes or impacts on the community, in terms of ecological, social or economic integrity?

While the previous ideas relate to project depth, it might also be important to expand in terms of breadth. For instance, it would be informative to take a wider sample of cities in other parts of North America; cities with other constraints and opportunities. A more robust and reliable set of implementation models could be created by increasing the geographic and cultural scope. In summary, there is a lot more to learn about effectively creating greenway networks.

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Appendix A. List of Cities Originally Considered for Case Study Sites

- American River Greenway, Sacramento, California
- Austin, Texas
- Capital City Greenways, Raleigh, North Carolina
- Delaware River Greenway, Delaware
- Hudson River Valley, New York
- Indianapolis, Indiana
- Mill Creek Streamway Park, Kansas
- Minneapolis, Minnesota
- Northeastern Illinois Region, Chicago, Illinois
- Ottawa, Ontario, Canada
- Pima County, Arizona
- Platte River Greenway, Denver, Colorado
- Portland, Oregon
- Redding Greenbelt, Colorado
- Richmond, Virginia
- San Francisco Bay, California
- Southeast Tennessee River Valley, Chattanooga, Tennessee
- Southeastern Wisconsin, Milwaukee, Wisconsin
- State of Florida
- State of Maryland
- Toronto, Ontario, Canada
- Washington D.C. metropolitan area
- West Windsor Township, New Jersey

Appendix B. List of Interviewees

Chattanooga, Tennessee

Jim Bowen
Vice President
River Valley Partners
One Central Plaza, Suite 500
835 Georgia Ave
Chattanooga, TN 37402

Wink Hastings
Landscape Architect
National Park Service
310 West Wisconsin, Rm. 500
Milwaukee, WI 53202

Will Abberger
Director of Conservation Services
Trust for Public Land
SE Regional Office
306 NE Monroe Street
Tallahassee, FL 32301

Charles Flink, ASLA
President
Greenways Incorporated
121 Edinburgh South, Suite 107
MacGregor Park
Cary, NC 27511

Chicago, Illinois

Richard Mariner
Manager of Land Resources
Northeastern Illinois Planning Commission
222 S. Riverside Plaza, suite 1800
Chicago, Illinois 60606

Ders Anderson
Greenways Director
Chicago Openlands Project
220 South State, suite 1880
Chicago, IL 60604

Bob Espeseth
Professor Emeritus
University of Illinois
Dept. of Recreation and Tourism Development
104 Huff Hall
1206 South 4th
Champaign, IL 61820

Wink Hastings
Landscape Architect
National Park Service
310 West Wisconsin, Rm. 500
Milwaukee, WI 53202

Indianapolis, Indiana

Ray Irvin
Manager
Greenways Resource Development
Indy Parks Greenways
1426 West 29th Street
Indianapolis, IN 46208-4999

Sandra Washington
Outdoor Recreation Planner
National Park Service
1709 Jackson Street
Omaha, NE 68102-2513

State of Maryland

Ed MacMahon
Director, American Greenways Program
The Conservation Fund
1800 North Kent Street, Suite 1120
Arlington, VA 22209

Teresa Moore
Executive Director
Maryland Greenways Commission
580 Taylor Avenue
Annapolis, MD 21401

Debi Osborne
Senior Project Manager
Trust for Public Land
666 Pennsylvania Avenue SE, Suite 401
Washington D.C. 20003

Minneapolis, Minnesota

Cynthia Whiteford
Regional Manager - Midwest Office
Trust for Public Land
420 North Fifth Street, Suite 865
Minneapolis, MN 55401

Susan Overson
Outdoor Recreation Planner
Mississippi National River and Recreation Area
National Park Service
175 East Fifth Street, Suite 418
St. Paul, MN 55101-2901

Florence Myslajek
Outdoor Recreation Planner
Metropolitan Council
Mears Park Centre, 230 East Fifth Street
St. Paul, MN 55101

William Morrish
Director
Design Center for American Urban Landscape
University of Minnesota
1313 Fifth Street SE, Suite 222
Minneapolis, MN 55414-1546

Portland, Oregon

Jim Desmond
Manager, Open Space Program
Metro
600 NE Grand Avenue
Portland, OR 97232-2736

Ron Klein
Public Affairs Specialist
Metro
600 NE Grand Avenue
Portland, OR 97232-2736

Toronto, Ontario CANADA

Suzanne Barrett
Director of Environmental Studies
Waterfront Regeneration Trust
207 Queen's Quay West, Suite 580
Toronto M5J 1A7

Charles Flink, ASLA
President
Greenways Incorporated
121 Edinburgh South, Suite 107
MacGregor Park
Cary, NC 27511

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